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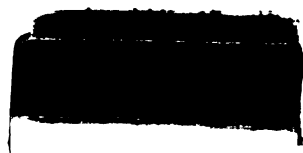
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REPORTS
FROM
COMMISSIONERS:

TWENTY-TWO VOLUMES.

—(3.)—

ALKALI ACT; FACTORIES; MINES;
SALMON FISHERIES (ENGLAND AND WALES);
FISHERIES (IRELAND);
HERRING FISHERIES (SCOTLAND);
EMIGRATION.

Session

6 February — 10 August 1872.

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REPORTS FROM COMMISSIONERS:

1872.

TWENTY-TWO VOLUMES:—CONTENTS OF THE THIRD VOLUME.

N. B.—*THE* Figures at the beginning of the line, correspond with the N° at the foot of each Report; and the Figures at the end of the line, refer to the MS. Paging of the Volumes arranged for The House of Commons.

ALKALI ACT:

- [c. 582.] Eight Annual Report of the Inspector of his Proceedings during the Year 1871 - - - - - p. 1

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FACTORIES:

- [c. 602.] Reports of the Inspectors of Factories, for the Year ending 30th April 1872 - - - - - 37

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- [c. 653.] Reports of the Inspectors of Mines for the Year 1871 - - - 229

SALMON FISHERIES (ENGLAND AND WALES):

- [c. 526.] Eleventh Annual Report of the Inspectors of Salmon Fisheries (England and Wales) - - - - - 425.

FISHERIES (IRELAND):

- [c. 642.] Report of the Inspectors of Irish Fisheries, on the Deep Sea, Coast, and Inland Fisheries of Ireland, for 1871 - - - - - 505.

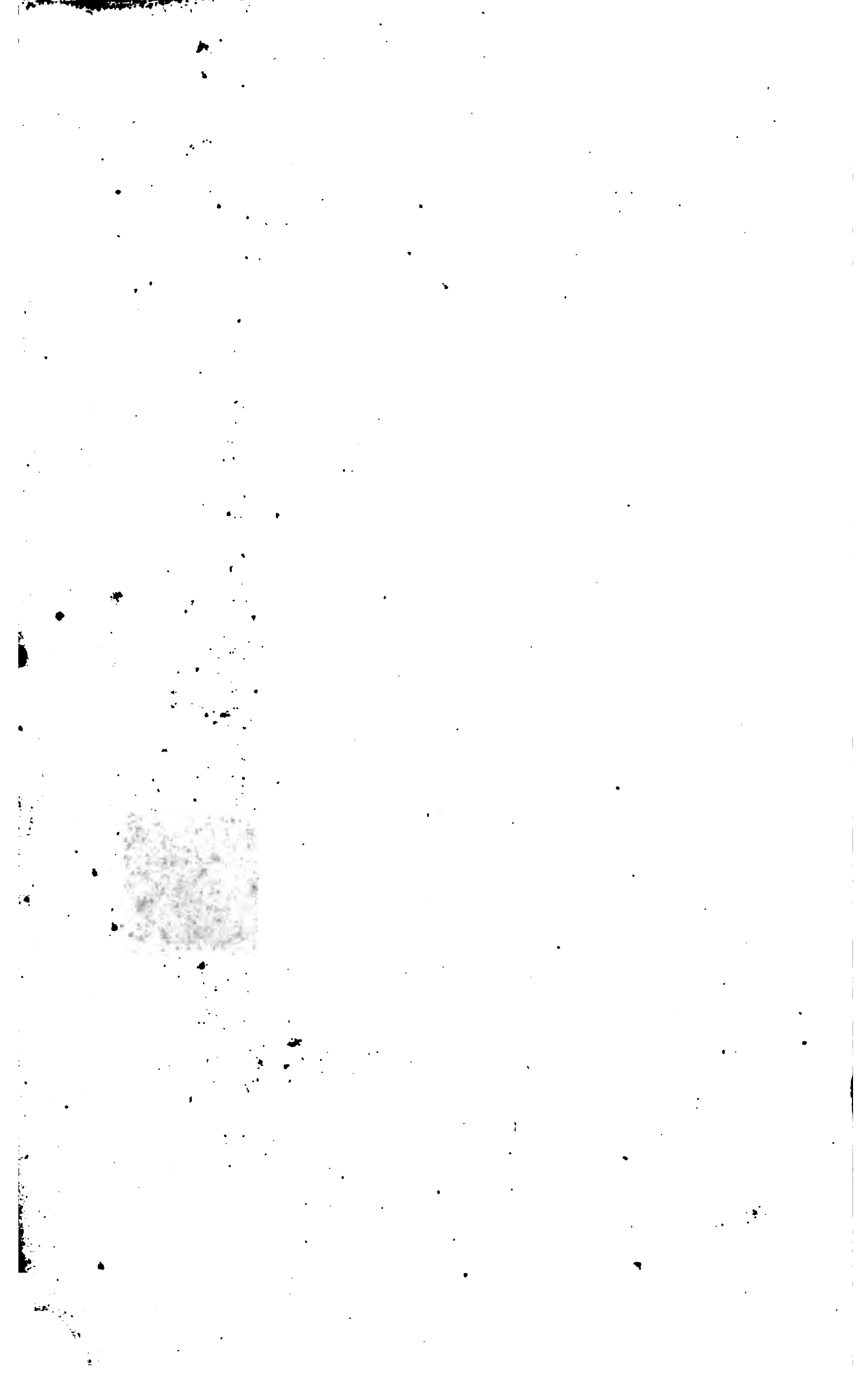
HERRING FISHERY (SCOTLAND):

- [c. 585.] Report of the Commissioners for the Herring Fishery (Scotland), of their Proceedings in the Year 1871, being the Fishing of 1871. - - - - - 609

EMIGRATION:

- [c. 562.] Thirty-second General Report of the Emigration Commissioners for the Year 1872 - - - - - 639

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M I N E S.

R E P O R T S

OF

THE INSPECTORS OF MINES,

TO

HER MAJESTY'S SECRETARY OF STATE,

For the Year 1871.

MR. WILLIS.

MR. DICKINSON.

MR. HIGSON.

MR. EVANS.

MR. WYNNE.

MR. BROUGH.

MR. BAKER.

MR. WALES.

MR. MOORE.

MR. ALEXANDER.

MR. SOUTHERN.

MR. WARDELL.

Presented to both Houses of Parliament by Command of Her Majesty.



LONDON:

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PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY.

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1872.

[C. 653.] Price 4s. 6d.

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A RETURN,

SHOWING

The NUMBER of MALE COAL MINERS EMPLOYED in and about the COAL MINES of GREAT BRITAIN, the NUMBER of FATAL ACCIDENTS and LIVES LOST, the QUANTITY of COAL RAISED, and the PROPORTION of ACCIDENTS and LIVES LOST to the NUMBER of PERSONS EMPLOYED and the TONS of COAL RAISED.

NAMES OF DISTRICTS.	Number of Male Coal Miners Employed as per Census 1861.	IN THE YEAR 1871.									
		As computed by each Inspector for his own District.		Separate Fatal Accidents.	Lives Lost by the Accidents.	Persons Employed per Separate Fatal Accident.	Person Employed per Life Lost.	Tons of Coal Raised per Separate Fatal Accident.	Tons of Coal Raised per Life Lost.	Number of Collieries.	
		Number of Male Persons Employed.	Tons of Coal Raised.								
Northumberland, Cumberland, and North Durham	22,719	36,000	12,580,000	66	66	545	545	189,848	189,848	190	
South Durham - - - - -	30,805	43,000	17,946,000	80	111	538	388	224,325	161,676	161	
North and East Lancashire - - - - -	23,525	26,110	7,575,800	61	61	428	428	124,193	124,193	286	
West Lancashire and North Wales - - - - -	24,302	32,218	8,775,000	111	193	290	166	79,054	45,466	186	
Yorkshire - - - - -	31,938	38,600	12,801,260	80	84	482	459	160,016	152,896	422	
Derby, Nottingham, Leicester, and Warwickshire - - - - -	23,434	31,051	9,252,900	56	93	554	334	185,234	99,494	200	
North Stafford, Cheshire, and Shropshire - - - - -	16,427	21,200	6,500,000	40	52	530	408	162,500	125,000	228	
South Stafford and Worcestershire - - - - -	25,235	31,000	10,500,000	73	84	424	369	143,835	125,000	545	
Monmouth, Gloucester, Somerset, and Devonshire - - - - -	21,762	26,881	7,000,000	70	89	371	292	100,000	78,652	186	
South Wales - - - - -	26,292	37,960	9,120,000	96	139	395	273	95,000	65,611	280	
Scattered over other Counties - - - - -	148	—	—	—	—	—	—	—	—	—	
East Scotland - - - - -	18,091	27,300	8,883,926	52	52	525	525	170,844	170,844	220	
West Scotland - - - - -	17,795	19,561	6,554,365	41	51	477	383	159,862	128,516	196	
Totals and Averages - - - - -	282,473	370,881	117,439,251	826	1,075	448	345	142,178	109,246	3,100	

The decrease in quantity in the South Wales district is due to a "strike" at the Steam Coal Collieries in the Rhondda and Aberdare Valleys.

Mr. Willis's Report.

REPORT ON THE INSPECTION OF MINES IN THE SOUTH DURHAM INSPECTION DISTRICT, from the 31st December 1870 to the 31st December 1871.—
By JAMES WILLIS, Esq.

SIR,

Old Elvet, Durham, 28th February 1872.

As Inspector of Mines for the South Durham District, and in accordance with the 27th section of the Act 23 and 24 Vict. cap. 151., I have the honour to lay before you my report for the year ending 31st December 1871.

In doing so I regret to have to report an increase in the number of lives lost compared with the deaths in the year 1870; at the same time I beg leave to point out a small decrease in the number of accidents in comparison with that year.

This unfortunate increase in the number of deaths, and the unusual proportion of lives lost to separate fatal accidents, is at once accounted for by the large number of deaths resulting from the melancholy explosion which occurred at the Seaham Colliery in October last; but notwithstanding the disturbance of the usual proportions of lives lost, to persons employed and tons of coal raised, it is gratifying to point to the improvement in the figures showing the proportions between persons employed and tons of coal raised, and the separate fatal accidents. This result is not of course entirely owing to the decrease in the number of accidents but is materially affected by the large increase in the quantity of coal raised, and also by the increase in the number of persons employed in the district.

The following table will show at a glance the comparison between the two years, viz., 1870 and 1871 :—

	1870.	1871.
Number of male persons employed -	41,100	43,000
Quantity of coal raised -	16,800,000	17,946,000
Separate fatal accidents -	86	80
Lives lost by the accidents -	91	111
Persons employed per separate fatal accident -	478	538
Persons employed per life lost -	452	388
Tons of coal raised per separate fatal accident -	195,349	224,325
Tons of coal raised per life lost -	184,615	161,676

The following table shows the number of fatal accidents of different kinds and the number of deaths that have resulted from them in, at, and about the mines of the district in each of the years 1867, 1868, 1869, 1870, and 1871, the last being the year embraced by this report :—

	Number of Separate Accidents.					Number of Deaths resulting.				
	Year.					Years.				
	1867.	1868.	1869.	1870.	1871.	1867.	1868.	1869.	1870.	1871.
EXPLOSIONS OF FIRE-DAMP -	1	1	1	-	2	1	1	2	-	27
FALLS OF COAL AND STONE.										
Falls of coal -	3	2	-	3	2	3	2	-	3	2
Falls of stone -	25	33	30	33	28	26	34	31	33	28
Total falls in mine -	28	35	30	36	30	29	36	31	36	30

Table of Fatal Accidents of different kinds and number of deaths, &c.—*continued.*

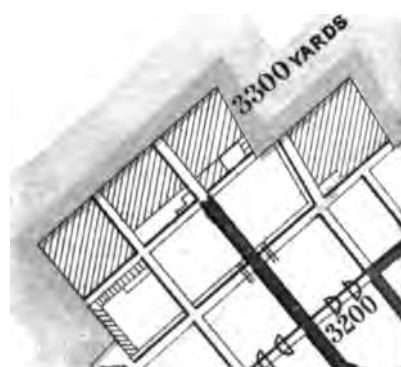
	Number of Separate Accidents.					Number of Deaths resulting.				
	Years.					Years.				
	1867.	1868.	1869.	1870.	1871.	1867.	1868.	1869.	1870.	1871.
IN SHAFTS.										
Overwinding - - - -	-	-	-	-	1	-	-	-	-	1
Ropes or chains breaking - -	1	-	-	2	-	1	-	-	5	-
Whilst ascending or descending -	1	3	1	3	-	1	3	1	3	-
Falling into shaft from top - -	-	1	3	1	-	-	1	3	1	-
Things falling from top of shaft -	-	-	1	-	-	-	-	1	-	-
Falling from part way down - -	-	3	1	-	4	-	3	1	-	5
Things falling from part way down -	-	-	-	1	-	-	-	-	1	-
Sundries in shafts - - - -	-	3	-	-	-	-	3	-	-	-
Totals in shafts - - -	2	10	6	7	5	2	10	6	10	6
MISCELLANEOUS UNDERGROUND.										
Explosions of gunpowder - - -	-	-	3	2	-	-	-	3	2	-
Suffocation by gases - - - -	1	-	-	-	-	1	-	-	-	-
Irruptions of water - - - -	-	-	-	-	3	-	-	-	-	8
Falling into water - - - -	-	-	-	1	-	-	-	-	1	-
On incline and engine planes - -	11	7	6	} 20 {	2	11	7	6	} 21 {	2
By trams or tubs underground - -	14	15	12		21	14	15	12		21
By machinery do. - - - -	-	3	1	2	2	-	3	1	2	2
Sundries underground - - - -	1	-	2	5	3	1	-	3	6	3
Total miscellaneous underground	27	25	24	30	31	27	25	25	32	36
Total underground - - -	58	71	61	73	68	59	72	64	78	99
ON SURFACE.										
By machinery on surface - - -	8	1	-	1	-	3	2	-	1	-
By boilers bursting on surface - -	2	2	1	1	-	4	3	3	1	-
By sundries on surface - - - -	11	10	12	11	12	11	10	12	11	12
Total on surface - - -	16	13	13	13	12	18	15	15	13	12
GROSS TOTALS - - - -	74	84	74	86	80	77	87	79	91	111

Explosions of Gas.

There have been two explosions of gas in this district during the year under notice, causing the deaths of 27 persons. The first of these (No. 59 in the list) occurred at the Shincliffe Colliery belonging to Mr. Joseph Love, on the 27th September last, by which one person lost his life. Certain working places in a "swalley" were unfit to be set to work by reason of water having risen in them during the night. The deputy in his round of examination travelled as far as the edge of the water, but did not examine the working places notwithstanding the knowledge he had that a slight blower of gas existed in one of the back "bords" and that the rise of the water would contract the airway, and although he could have done so, as the water at its deepest point was less than three feet in depth. He, however, found other places for the workmen on the edge of the "swalley," and strictly charged them not on any account to go into their own places, and, as far as he was able, provided them with working tools, their own gear being in the places under water. One of the men not being satisfied with the shovel which had been given him, proceeded with a naked light to search for his own in one of the drowned "bords," and having reached the "place end" the gas exploded, causing him injuries of which he died.

The deputy, although he had determined not to set the places to work neglected his duty in not examining the whole of them, when he was aware of the existence of the "blower" and of the contraction of the airway consequent upon the rise of the water, and he committed a grave error in permitting the men to work in the adjoining places with naked lights, seeing that their ventilation depended upon air which had passed the small blower already mentioned. A considerable laxity in discipline was also shown by the hewer going into a place which he had been warned not to do.

No. 65. This explosion occurred on the 25th October, by which no less than 26 persons lost their lives, and was by far the most serious explosion which has occurred for many years in this district.



Seaham Colliery, belonging to The Right Honorable Earl Vane, is situated on the coast near to Seaham Harbour, and is one of the largest establishments in the district. It consists of Nos. 1, 2, and 3 pits which are sunk to the Hutton Seam at a depth of 254 fathoms from the surface. Nos. 1 and 2 pits consist of one large shaft divided for the purpose of coal drawing by a brattice from top to bottom, this shaft is the downcast for ventilation, and No. 3 pit is the upcast. The explosion took place in the Hutton Seam of No. 3 pit workings which are shown on the accompanying plan. The mode of ventilation is by furnace.

The explosion occurred at about half-past eleven o'clock on the night of the 25th, and immediately afterwards exploring parties were organised, who continued their work until about twelve o'clock on the following day, when it was discovered that a large fire was raging in the intake airway near some stables; this point is marked "fire" on the accompanying plan. On the discovery of this fire the exploring party left their work for the purpose of explaining the circumstances and consulting with their superiors and other eminent mining engineers who had volunteered their services. A consultation took place in the colliery offices, when it was unanimously decided to "seal" the portion of the workings in which the explosion had occurred. With this decision on my arrival at four o'clock I agreed, and it was arranged to build "stoppings" in the positions shewn on the plan; these were completed on the 27th, and the workings remained in that condition until the 16th December, when the "stoppings" were removed, the bodies of the men recovered, and repeated examinations of the mine subsequently made.

I now beg leave to insert the principal points of the evidence given at the inquest held on the bodies, at which by your instructions I had the assistance of Mr. Dickinson, H.M. Inspector, Manchester district, and where also Mr. R. P. Philipson and Mr. Folkard appeared on behalf of Earl Vane and the relatives of the deceased respectively; representatives of the Durham Miner's Association were also present.

My own evidence given by request of one of the jurymen gives briefly my views of the case. Further examinations and careful study have not led me to change my opinion.

Seaham Colliery Explosion.

Adjourned Inquest.

Held in the schoolroom, Seaham Colliery, on Thursday, Nov. 16th, 1871, before Mr. Coroner Maynard and a jury of 15 persons; Mr. Willis, the Government Inspector of Mines, was present.

The Coroner. "The pit not having been opened out to allow of an examination of the workings so as to obtain evidence of how the explosion occurred, I intend to take to-day only the groundwork of the inquiry. The viewer will give some explanations with regard to the workings of the pit, and we can then examine Hutchinson, the man who was down the pit at the time the explosion occurred, and then take an adjournment for a month, by which time the Inspector says the pit will have been examined, and we can then go straight through with the whole inquiry.

The Inspector. "I don't know that they will be able to examine the workings within a month. You had better make it six weeks.

The Coroner agreed to this course with the assent of the jury, and then called

William Dakers, who said, "I am resident viewer at Seaham Colliery for the whole of the pits Nos. 1, 2, and 3. I produce a list of the men lost. I am certain all these men went down that night before the explosion. I produce a plan of the workings of No. 3 pit, Hutton Seam, Silkworth way. That is the seam and district in which the explosion occurred. The plan shows Nos. 1 and 2 as the downcast, and No. 3 as the upcast. It shows the intake for ventilation to the No. 3 pit workings; this is coloured blue. The portions marked red are the returns in the same seam and workings. The plan also shows the goaf worked out. The men still in the pit are in a district 3,000 yards from the downcast shaft. The explosion took place on the night of Wednesday, the 25th of October, at 11.30 p.m. I was called out of bed at the time and got down the pit in 20 minutes from the time it occurred. I met first old Hutchinson, who was living and had just been got out of the pit. Hutchinson's son I found lying 140 yards from the bottom of the shaft in the intake; he was dead. I continued along the intake, and when I came opposite No. 3 shaft, the upcast, I heard a man crying as though he was severely injured, and I told two men to go away to him at once and get him out. When I went away from him I went to the crossings in the intake and found them blown out. Then I proceeded further and found two doors blown out on the north side. Then I came back to the bottom of the staple on the south side, and found the doors blown out there into the return. After that I returned and went up No. 1 bank for a short distance, and

there met the afterdamp and could get no further. I then sent some men to bank to get canvas bratticing out of the store for repairing these crossings and doors. During the time, I went to the north headways opposite to the No. 3 shaft. The first crossing I came to was damaged a little. I proceeded further into the next crossing and found it was not damaged at all. There had been a slight force of explosion past it. After I passed that point I came to a pair of double doors leading into the standage; the first door was blown off, the second was standing none the worse. Then, after that, I came away back along to the No. 3 pit, and found the whole of the doors blown out between the upcast and the intake. The tubs standing in the shaft siding at the upcast pit were blown together. The greatest force of the explosion appeared to have been at the bottom of the Main Coal staple; the tubs were more knocked together there. This staple connects the Main Coal with the Hutton Seam; there was a portion of the timber in the staple blown out and lying at the bottom. I then returned into the main intake, and went two pillars up the No. 1 bank, and there met with afterdamp. I ordered men to put up temporary stoppings with canvas, and then we went up till we got to the head of No. 2 bank, where I found a very heavy fall on the rolley way, stone, coals, timber, and such like. I found some men who had been clearing the road sitting at the bank head. I asked them if they had tried to get over the fall; they said they had not as they thought 'she' had fallen close. One of the men came with me and we got across the fall. Then we got away up to where we turn north into the Silksworth headways. We found a pair of doors there that went into the return blown out. There the afterdamp was standing just on the inbye side of the Silksworth way. I put canvas stoppings in there, and then it cleared out to the crossing still further on, which was blown out. We repaired the crossing with canvas, and then got up to the out-bye end of the stables. The stable stalls are ranged alongside the way, and beyond the stables is a very wide place, so that with the little air we had we could not beat the afterdamp back. Then, leaving the men, I went away out-bye to the shaft, and tried to get more air in by setting a waterfall on. I then returned and still found afterdamp at the stables. We worked on for a considerable time until we got nearly to the in-bye end of the stables. At this time I was compelled to leave them and go to bank to a consultation which was being held in the colliery office. I had not seen any fire, but I had every reason to think there was fire from the warmth of the mine. At the consultation it was considered advisable to try more waterfall in the shaft in order to get a better ventilation. I came away from the office and put more waterfall on. On reaching the bottom of the pit I met the men I had left in, coming out-bye as fast as they could come, and they told me she was all on fire together a little beyond the stable ends. That was in the forenoon some time; I think it was about twelve o'clock. There would be 20 or 30 men at that time. There was no means of getting in-bye any other way. There is only one intake and two returns; the intake is the likeliest place to get in. I went through into the returns, which was full of afterdamp the same as the intake; the afterdamp we were forcing out of the intake was coming out of the returns; the furnace was not injured at all. I had previously sent a man to put the furnace fire out after the accident occurred. After I met the men we came to bank again. I took the men with me to the colliery office to make a statement as to seeing the fire. After it was proved that the fire was there it was considered better to seal the mine up. Dawson and Laws were the two men in charge at the time; they are the back-overmen. There was no viewer there at the moment the fire was seen, and no viewer went up afterwards. As to the extent of the fire, they told me it was on fire at three or four different places; there was no water near to apply to the fire. I waited a considerable time longer than I should have waited that morning, expecting to see some fire at the stable end. I thought if there was a fire and it was not extensive, we might have put it out. The men were very frightened as soon as they saw the fire, and when they forced the air into it the flame broke out; as soon as they saw that they retreated at once. These workings are more than fifty fathoms above the level of the shaft; there was no one in after that. They put a canvas stopping right across the place to prevent the air getting into it, and then retreated back to the shaft; this was 2,000 yards from the bottom of the downcast shaft.

"The existence of the fire was brought before the viewers in consultation at the colliery office, and they decided that no time should be lost, and that the place should be sealed up at once for fear of a second explosion. And the fear of a second explosion determined us from losing any time in getting the place sealed. We could not ascertain the extent of the fire without carrying fresh air in, and it was thought not advisable to do that.

"I now produce the ventilation book. We have the different pits, and the quantity of air going into the district. The north Main Coal is the first split. There is the total

quantity in No. 3 pit. This was taken on the 12th of October; it is measured once a fortnight. There is a general measurement of the air. There is not any other measurement made during the fortnight, unless there is some cause or some suspicion that all is not right. We have no daily register further than the water gauge, we get that daily.

The Coroner. " Shall we go into that ?

The Inspector. " At the next examination you will have precisely the same means of ascertaining the state of the ventilation.

The Coroner. " I think we would get a clearer light after the examination of the pit where the explosion took place; after that has been made, possibly we would not need to go into some evidence we might otherwise take now.

The Inspector. " I think it would tend to make it a more satisfactory examination altogether if you could wait until the pit has been opened out. It is quite possible there may be some very clear cause for the explosion.

The Coroner. " And this evidence may prove to be not important.

The Inspector. " It would be much better to leave it for the present.

Mr. Dakers. " We did not rid the fall or clear the rolley way up to the fall; there was very little on the rolley way. There were two doors knocked out between that fall and the upcast shaft in the north side. There was a crossing blown out at the outbye end of the fall. I did not find one of the brick stoppings blown out. There was the most damage done at the very wide place where the timber was blown down. The body of Spence was found at the inbye end of the fall, or the top of the No. 2 bank. There was a horse at the inbye end of the fall; he had been coming outbye with a loaded set. When we saw this we suspected the driver must be there. I set men to rid, but they could not find the driver. They found Spence; he was burnt; his lamp was not found. There was one lamp, we think it was Hutchinson's; the top was blown off it; no doubt it was blown to pieces by the force of the explosion.

The Coroner. " Now, gentlemen, I think we will leave Mr. Dakers alone until the adjournment, unless the jury wish to ask him any further questions.

The Inspector. " Mr. Dakers will have to give more evidence at the adjournment.

The Coroner. " Can we examine Hutchinson?

Mr. Dakers. " At his own house; he cannot attend the inquest, yet as far as I know he is out of danger, though his throat is still affected.

The Foreman. " I understand from the doctor that he is quite out of danger.

The Police Superintendent. " There would not be room for the jury in his house.

The Inspector. " His evidence will be important, I believe; it is necessary that we should have it.

The Coroner. " Has his deposition been taken?

Mr. Eminson. " No; it was not thought necessary to take it, because he was considered to be quite out of danger.

The Coroner. " If there is no fear of the man it will be better to wait for his evidence till the adjournment."

The inquest was then adjourned till Thursday January 18th, 1872, the jury to meet at the Station Hotel at Seaham Harbour at 9 a.m. on that day.

The adjourned inquiry into the circumstances connected with the explosion which took place at Seaham Colliery on the 25th of October last, was held at the Station Hotel, Seaham, before Mr. C. Maynard, coroner. Mr. Willis and Mr. Dickinson, Government Inspectors of Mines, were present. Mr. Philipson, of Newcastle, solicitor, watched the proceedings on behalf of the owners of the colliery, and Mr. Folkard discharged a similar duty in the interest of the Durham Miners' Mutual Confident Association. Mr. Crawford, President, and Mr. Patterson, Agent of the Durham Miners' Association, were present. A large number of the miners connected with the Seaham Colliery were also present.

The Coroner having read the evidence taken at the last inquiry,

Mr. William Dakers, viewer, was then called. He said, " I wish to correct my former evidence with reference to a stopping being put in near the stables. The Coroner had read, ' We put in stoppings to prevent the fire getting to the stables.' I was not near at the time. The stoppings were put in by the exploring party. I left the workmen at their request. They urged me several times to leave for the purpose of procuring more assistance as we were getting on so slowly. The stoppings were put in at ten o'clock on the Thursday night. There was no possibility of the men being got out alive after meeting with the afterdamp. In going inbye the afterdamp was standing at the foot of No. 1 bank, and we thought it impossible for the men to be alive. We drove the afterdamp back as we drove the air in. (*Mr. Dakers here explained, from a plan which was laid upon the table, that it was impossible for the men to be recovered alive.*)

At No 2 bank head both returns were choked up with afterdamp. I came up, and in going past the fall I saw the explorers sitting, and they said it was impossible to get past the first crossing in the north way. The crossing was blown down. There was afterdamp in the east and west ways. When we got to the stables there was no person met. I met the men opposite the Seaton shaft. I was then going to bank for the purpose of consulting with some gentlemen who were in the office. Before blocking up the mine we had a consultation as to what should be done. Mr. John Taylor, Mr. L. Wood, Mr. R. F. Matthews, Mr. Hepplewhite, and Mr. Turnbull, Hetton-le-Hole, were present. I cannot say whether or not any of the men were present. The resolution to seal up the workings was unanimously come to; there was no division.

“The consultation was held about one o'clock on the Thursday, about 18 hours after the explosion occurred. The workings were sealed up in consequence of what the men reported. They said they had seen the fire, and they considered the sooner the pit was closed the better.

The Coroner. “Laws and Dawson reported the extent of the fire.

“After hearing the evidence of the men it was thought the only thing that could be done was to get the pit sealed, a second explosion being anticipated. At that time we were under the impression that the explosion had occurred at the other end of the workings. I went down the pit after this arrangement was come to to mark off the places where the seals had to be put in. The principal part of the smoke came out of the east return, but I cannot speak of the west return. The nearest water was at the shaft. The stoppings were sealed up on Friday night the 27th of October, and they were kept in until the 16th of December. We commenced on the 16th December to open out the sealed portion of the mine. I was down the pit in company with Mr. Thompson, underviewer, and several miners. There were also Mr. Gustard, Mr. Laverick, and Mr. John Dakers. We went to the south stopping first. At two o'clock we drew the 4-inch plug, when the gas at once came through. We allowed it to run for some time, and then we took out the plug of the second stopping, and after the gas had run off we came to take the plug out of the intake stopping. After the running of the gas had somewhat abated, we commenced to take down the brickwork. On Monday morning, after the gas had cleared away, I got to the staple. On Wednesday morning following we examined a portion of the pit up to the edge of the fall at No. 2 Bank head, where the gas had sufficiently cleared away. There had not been any alteration of the mine. The returns were filled with gas. By the time we had got to the North station the bodies of the men had all been found. After the last body had been taken away I examined the stable end where the fire had been. The stables are 30 yards in length; nine bundles of hay were consumed in the hay board. The coal was burnt 2 feet deep for a distance of about 13 yards in-by from the stables. There was a hay-board, and it was totally burnt out. The stables were not totally burnt; a hay rack was burnt further in. There was a chock burnt out from top to bottom. Some mason work had fallen down. The greatest force of the explosion appeared to be at No. 2 Bank and at the bottom of the Main Coal staple, and there were no signs of force on the in-by side further than 200 yards beyond the stables which were on fire. From the result of my inspection I had indication of fire into the north Main Coal where the doors go into the standage. My opinion is that the explosion took place at the No. 2 Bank head. There are traces of the explosion both in-by and out-by. I saw symptoms of force at the bottom of No. 3 shaft; this, I think, was a continuation of the explosion from No. 2 Bank head. I am judging from the way in which the stuff was blown about, and from the direction of the force of the explosion. I think there had been a fall at No. 2 Bank head immediately previous to the explosion which had liberated the gas, which I think had fired upon Spence. This (producing a lamp) is Spence's lamp. His body was found at the in-by end of the bank head. His lamp had been damaged by the explosion, but the threads of the screw at the bottom of the lamp have not been damaged. My opinion is that the bottom of the lamp had been screwed off previous to the explosion; the threads would have been torn if the lamp bottom had been forced off at the time of the explosion. The gauze of the lamp has not been found. The roof at No. 2 Bank head was metal stone. There were baulks of timber supporting the roof from one end to the other. The baulks were 2 feet 6 inches apart and 8 feet high to the under side. The roof is now 4 feet higher than it was before. That is the point where I think the explosion took place. There was no damage done to the furnace. There were no symptoms of an explosion nearer the furnace than 100 yards, and these in the intake. We measure our quantities of air once every fortnight. The last measurement prior to the explosion was on the 12th of October, when the quantity passing the place where Hutchinson's shot was fired was 79,000 feet per minute,

thus afterwards split, viz.: North Main coal, 6,000, Main coal staple, 45,000, and Silks-worth way, 28,000 cubic feet per minute. The 28,000 feet per minute would pass the scene of the explosion. Gas was reported to me in August 1869. At the Old South way end there are four pillars where I have seen gas coming off the goaf, but I have not known it show at this point until the furnace has been out for 24 hours. I have reports from the two overmen and the master wasteman. They are daily reports. If there is any gas it is always specially reported to me. The lofting at No. 2 Bank head was examined by me four or five days previous to the explosion. It was my usual weekly examination. We have no special orders about examining particular places, but we are instructed to examine daily any place suspected of containing gas. The lofting is not a place where gas might be expected to lodge, as there is no coal seam at the top of it, and it is well ventilated. The lofting is 8 chains from the goaf on the north side, and 10 chains on the south side. There are stoppings on both sides betwixt the intake and the return air courses, in some cases stone and some brick. So far as I knew, the way was clear of gas. I can only account for the explosion by a fall having taken place at No. 2 Bank head and liberated the gas from the roof. I cannot say there was any necessity for Spence to have his lamp unscrewed, but naked lights are allowed at that part of the mine. I have no other reason, except that the threads are not injured, for thinking that Spence's lamp was unscrewed. My opinion is that only one explosion took place, but it is possible there might be one at the pipe which conveys gas from the surface to light the bottom of the pit, and which passes the place where Hutchinson was working. I did not notice what state the gas pipe was in the first time I was down, as I directed my attention principally to getting in-bye to the men; the pit was all broken up where Hutchinson had fired his shot.

By Mr. Willis. "The length of the lofting prior to the explosion was about 125 feet; the height above the top of the timber about 3 feet 6 inches; the width about 18 feet. I think that the cavity might contain sufficient gas to do the injuries described. The height after the explosion was 20 feet; previous to the explosion it was only 16 feet. The cavity has been there for over 12 years. I made an examination about 10 months ago when it was quite clear. It was the wasteman's duty to examine it and report to me. I was aware that open lights were exposed underneath the cavity. We have a similar lofting further down, where there are sloping spouts to carry air into them, but in the cavity where the explosion took place there was no such means for ventilation. The report, in all cases when gas is found, comes direct to me. I have never received any report of gas having been discovered at the places mentioned. I have not found any signs of gas about the returns, and I have examined very minutely the furnace and have not discovered anything. The whole of the returns go past the furnace and are united about 100 yards before reaching it. Where Hutchinson, who fired the shot, was working was in the intake near the gas pipe. The size of the gas pipe is $2\frac{1}{2}$ inches down Nos. 1 and 2 pits, and where the shot was fired $1\frac{1}{2}$ inch. The pressure of gas to force the air down the pit was equal to 13 inches of water. The ventilating power was 3 inches. Supposing the gas to have leaked out of the pipe it would have gone towards the cavity I have spoken of, and also up the north staple. The men had been alive for some time after the explosion, as they had tried to save themselves from being suffocated by afterdamp.

By Mr. Dickinson. "Another indication that the men had been alive after the explosion is that some writing was found on some boards. The decision to close up the pit was made at two p.m. on Thursday. The masons went down for that purpose that evening. Dawson, Laws, Strong, and Murray first saw the fire. There was a very great noise like the cracking of stone, &c. I was in to about 30 yards from the fire, and did not see anything of it. There was a great quantity of smoke, which was very injurious to the eyes. The men pressed me to go out of the mine to arrange for getting more air in. A second attempt was not made to get to the men; if we had done so we should have risked other men's lives. The writing on the board records that the men were alive up to 10 o'clock, and the resolution to seal up the mine was come to three hours after the time it is now known some of the men were alive. I do not recollect that I told the viewers before they had decided to close the mine that no gas had been seen in the pit for a year. The ventilation had entirely ceased, and the fear of gas coming from the goaves was the principal feature in the decision the viewers arrived at. At that time we were under the impression that the explosion had taken place in the far-in workings, and if that had been the case it was impossible for any of the men to be alive. If a vigorous effort had been made after the hay fire had died out, if it did die out, I do not think that the coal that would then be on fire could have been put out.

Dawson and Laws reported that they had seen 40 yards of fire. I have examined the water standage near the shaft for an accumulation of gas, but I found none. I am quite sure that the explosion at the Bank head caused the whole of the damage.

By Mr. Folkard. "We took the evidence of the men Dawson and Laws before we determined to close the mine. No one in particular presided at the consultation of viewers. I am quite certain that it was not before 10 o'clock that we commenced to put in the wall stoppings. The men were down getting the bricks ready before that time. I did not see the fire myself. We found a horse and set of tubs near the No. 2 Bank head, and I came to the conclusion that the driver was there. I set some men to seek for him underneath the fall, and Spence was found. The boy was afterwards found in another direction. There was a paraffin lamp at the No. 2 Bank head. It is not known whether the paraffin lamp was burning at the time of the explosion or not. It should have been put out at five o'clock that evening.

Cross-examined by Mr. Philipson. "I am of opinion that there has been one fall before the explosion, and one after. I never heard any complaints from the men respecting the ventilation of the workings. The viewers were unanimous in sealing up the pit.

Thomas Hutchinson, who was the only survivor from the explosion, was called, and bore traces of injury received. He said: "I am a stoneman and have worked six years at Seaham Colliery. I was in the pit when the explosion occurred. At the time of the explosion I and my son were widening the drift to No. 3 workings. Harrison set me to work that night. There was no slackness of the ventilation. We were blasting the side down. We commenced drilling between eight and nine o'clock. In order to prevent the gas pipe from being broken by the shot we stayed it up so as to keep it out of the way, and just before lighting the shot I looked up the bank for the purpose of seeing if I could observe any person coming. I saw the usual gas light near the engine house. My son lighted a piece of touch. I went out-bye for the purpose of preventing any person from coming, and my son walked away. I went into the mouth of the new drift, about 30 yards out of the way of the shot, and the shot and fire both came together. After the explosion when I was lying I shouted out for my son, but could not hear him, so I made my way to the shaft. After I had been a short time at the shaft I met with Mr. Thompson and one of my marrows, and I told them that I believed that the explosion had taken place from our shot, but I really believe it did not. The gas pipe sometimes leaked and then we lighted the leaks. We used to report to Harrison when a leakage was observed. We considered it much better to light the leakage than let it escape into the pure air. The fire came out-bye. I heard only one report. I cannot say that I was insensible. I felt stupid like. If there was an explosion after my shot I did not hear it. I think the report of my shot met the report of the explosion.

By Mr. Willis. "We have frequently broken the gas pipe down, which caused a leak, and we used to light the leak. We had about 9 or 10 inches of powder in an inch gauge for the shot. If we had had a moment's notice we could both have saved our lives. There was no possibility of any gas where we were exploding as there was sufficient air to drive a windmill. Certainly there was not more than one explosion.

By Mr. Dickinson. "I never made a statement that the gas had fired by my shot but to Mr. Thompson.

By the Coroner. "The time I was deputy the pit was in a good condition, and during the whole time that I have been upon the colliery there has been capital ventilation.

Joseph Thompson. "I am under-viewer at Seaham Colliery. I was out of the pit at the time of the explosion. I heard of it about two minutes afterwards. I went down immediately.

The witness then gave detailed evidence, agreeing in all important points with that of Mr. Dakers, relative to the exploration of the mine, until the fire at the stables was discovered. He then proceeded: "After the sealed portion was opened, I found James Bowman 600 yards from the shaft. I found Laing 2,700 yards from the shaft. He was not at all burnt. I found a board which has already been produced. Further in I found a group of six men. About 200 yards further I found other eight. I fancy that Spence at the time of the explosion, has had his lamp bottom off. I think the explosion was caused by gas forcing the stone down, and then igniting at Spence's lamp. I last examined the lofting on the 28th of April last. I saw no indications of gas at the time. No gas to my knowledge has been seen in the returns or the intake. The men have never reported the presence of gas. The stone displaced was of a very hard nature. My attention was drawn to the place where Hutchinson was working. I did not examine the place at the time, but I have done so since. The gas pipe is down the pit. It is broken

just where a shot has been fired. I did not notice any old leakage in the pipe. I do not think the explosion could have taken place at the furnace.

By Mr. Willis. "There was no indication of a fall having taken place previously. The gas pipe where Hutchinson was working was twisted in two or three places. The water standage is examined almost every day.

By Mr. Dickinson. "The lofting above the timber the last time I saw it and measured it was about 6 feet high, which makes its cubical capacity about 8,000 feet. There was no possibility of any gas accumulating in an old drift at the water standage. I am of the firm opinion that the explosion took place at No. 2 bank. I met about 20 men proceeding to bank and all they said to me was 'She is all on fire.' We were then drawn up the shaft.

By Mr. Willis. "I have never had any complaints about any gas having been found.

By Mr. Folkard. "At the consultation the men, Laws and Dawson, were examined, and in consequence of what they said we came to the conclusion to seal up that portion of the pit.

By the Foreman (Dr. Smith). "I did not hear any 'jowling' or signals from the men beyond the fire.

By the Coroner. "I found one of the boards Mr. Dakers has produced. The writing on it was 'Nine o'clock. All alive. But Hay died at 7. D. Ballantine.'

Robert Todd. "I am an overman at No. 3 Seaham Pit. My duty is to examine and see the pit is safe before the men go to work. I was not in the pit when the explosion took place. I made an examination of the pit on the 25th October at half past 9 o'clock in the morning, and I found all in proper order. Witness described from the plan of the workings where he had examined. I was not up to the timber that day. When I examined the lofting I generally got upon a loaded tub. I never saw the presence or signs of gas on the lofting. I believe that I made an examination of the lofting four or five days prior to the explosion. I have never heard any of the men complain. I found gas on the 15th August 1869 in the west side of the workings. The furnace on that occasion had been out 24 hours. I never saw any gas near the water standage. I came out of the pit on the 25th October about five o'clock. I did not detect any gas. I looked at the pipes and found all right.

By Mr. Folkard. "I could not get to the extreme height of the roof at the lofting when standing on the top of the tubs. I could touch within three feet with my lamp. I have been 10 years an overman.

By the Coroner. "I cannot remember any person complaining respecting gas. She is a very clean pit.

Mr. Willis. "It is hardly a fair question to ask, but have you ever looked for gas?—Yes.

William Laws. "I am back overman. At the time this happened I was not in the pit. I went down the pit immediately and joined the exploring parties and continued with them until the fire was discovered. I proceeded with Mr. Dakers over the heavy fall. We could not proceed further in consequence of the afterdamp and smoke. We tried to get in by driving the afterdamp, and we failed. When I discovered that we could not proceed further I requested Mr. Dakers to get some more air in, and he did so. I had not seen fire but I knew that there was fire, as I heard the reports of the breakage of stone and also felt the heat. We made a canvas frame and carried it in before us. Strong and Murray had the canvas frame. Strong called my attention to a fire which extended across the main way. We all left. On going towards the shaft we met Mr. Hepplewhite, and we reported to him that we had seen fire. He asked if it could be seen and we told him that it could. He was returning with us for the purpose of seeing the fire, when he said it was no use running any further risk. This was about one o'clock on Thursday afternoon. There was no chance of getting the men out.

By Mr. Willis. "There was no possibility of any man getting past the fire alive. The fire that we saw was from the hay board. It appeared to me that it was coal that was burning. When I was in the pit I always considered that I was in the safest in the north of England. I never heard of any complaints by the men.

By Mr. Folkard. "I told Mr. Dakers after the consultation that there was fire, and a very great quantity of it, right across the main way. I also told Mr. Dakers that I could see about 20 yards before me.

By Mr. Dickinson. "The reason I took such a fright at the fire was because I knew there was danger of a second explosion. I would have gone in with any man.

Edward Dawson said: "I am overman of No. 3 pit. I was in the pit at three o'clock in the morning previous to the explosion, and came out at ten o'clock. I examined the face. I merely looked at my lamp to see if there was any gas. I did

not examine the lofting at No. 2 bankhead. I have been back overman for eight or nine years. There have been four or five falls at the bankhead lofting. The last fall took place about 12 months ago. I examined the lofting whenever a fall took place. There never was the slightest indication of gas. Occasionally I have put my lamp up to the baulks, but I never went right up to them. No complaint of gas has ever been made to me. I was up to the fire. My opinion is that there were 40 yards of fire. I assisted to put in a canvas brattice. I saw Hepplewhite, Turnbull, and Thompson and told them what I had seen. I offered to show them the fire, but after we had gone a few yards Turnbull thought it not right to go. Mr. Thompson agreed with Turnbull and thought it would be advisable to consult at bank. I sometimes found gas in the goaf. Sometimes it would take the lamp and sometimes it would not. I never 'booked' having seen any gas in the goaf. I expected the goaves to occasionally give off gas. The reason we left the fire and never returned was because we had not sufficient force. We had no means of grappling with the fire. Laws and I considered that it was impossible to get through the fire. There was 12 feet of space above the timbers at the lofting. I examined the place with my lamp. I don't think it was possible to get past the fire or to get it under. I never went back again to see whether it had abated or increased.

By Mr. Willis. "Mr. Turnbull was acquainted with the pit.

By Mr. Dickinson. "I frequently saw gas in the goaves. Sometimes I found it and sometimes not. It was not a regular thing that the gas would take the lamp. Sometimes it would and sometimes not. I am speaking of the working goaf. I couldn't say how far from the working face. I cannot say what day I saw gas in the goaf. It is an unusual thing to find it in the goaf. We take the lamp when we travel. It is not a thing which would be reported or 'booked' if gas took the lamp. That is only done when gas is towards the working places.

"Laws and I did not try to deal with the fire because we hadn't plenty of strength. The 20 men all ran away, and there were only four of us left.

"It was the master wasteman's duty to examine the pit in the water standage.

By Mr. Folkard. "My object in going there at three o'clock was to examine the mine before the men went to work. I didn't examine the lofting when I got to the bank head, but I put my lamp up to the baulks. It is between six and seven feet high. The extreme height of the lofting above all the timbers is about 12 feet more.

Mr. Dickinson. "You have often seen the gas coming off the goaves, but cannot tell whether it was 12 months ago, or any time. Have you seen any within a week or a fortnight, in any place?

--"No, I have looked carefully.

"I thought there were 40 yards of fire. I have been down the pit since it was opened, and I am satisfied now there were 40 yards of fire. I attended the consultation of viewers, and told them there were 40 yards. Nobody saw it after we left it. I was asked if there was fire, and I said 'Yes.' They asked me the length, and I said 40 or 50 yards. The hay was all burnt. The rack was burnt out at the bottom, but some of the rack was standing. I am of opinion now that the fire was as great as I thought on the day I reported it.

By Mr. Philipson. "I considered the lofting sufficiently timbered to protect the roof. There is gas in every goaf. It does not come from the goaf into the returns. We have plenty of ventilation to keep it all clear if any did come in. When the ventilation ceased there was nothing to sweep away the gas. That is one of the things to be apprehended after an explosion, when the ventilation is taken away. At the time I was in-by with Laws I could not tell where the explosion had taken place. We could form no opinion about it. We had no water to apply to the fire. We had no means of grappling with the fire at all. We could not possibly have done anything to get in to the men. It was impossible to get through. If anything could have been done it would have been done. Only two men, Laws and myself, were left at the last at the fire. The other men had all come away as soon as they saw the fire. We could have done nothing with it ourselves. The pit is examined by deputies before the men go in. Thomas Strong and Allan Murray were the two men who were with us at the fire.

Allan Murray. "I was with Laws and Dawson when they came upon the fire. We had a canvas to protect us from the afterdamp. We got about 12 yards from a body of fire. It seemed to be a very large fire. I think it was useless to attempt to put the fire out, because it was so bright and seemed so large.

Thomas Strong said: "I was in the pit after the explosion. We were forced back by afterdamp and smoke, and then came upon the fire. I saw the fire and called the attention of Dawson and Laws to it. The men who were with Dawson, Laws, Murray,

and myself left us. I think it was impossible to have put the fire out without loss of life. If we had put more air on the fire, it would have got larger.

William Taylor said: "I have been a miner 35 years, and am now employed in repairing the doors and waggon ways. I have been frequently in the lofting at No. 2 bank head. I used my safety lamp. I always put the lamp to the top of the lofting to see if it was clear of gas. I never saw any indications of gas. The height I got with the lamp was about five or six feet. The last time I was in the lofting was in September. It was all right at that time. The place was cool, and the air circulated freely. I never heard any of the men complain of the ventilation.

By Mr. Willis. "I had charge of the lofting. I had to keep it clean. I know the other lofting in the out-bye side. I looked after both of them. It was the overman's duty to attend to the ventilation of the pit. A 'sconce' had been put into the lofting in the out-bye side, but it was not through any fear of gas accumulating.

By Mr. Dickinson. "There was always a good current of air. I do not know where the gas which caused the explosion came from. Todd, the overman, ordered me to keep the lofting clear. It was the overman's duty to examine the lofting. I have frequently seen Todd examine it; he went on the top. I can solemnly swear that I have seen Todd on the top of the lofting since last April.

Mr. Folkard. "I always examined this place when I was in it. I always put my lamp to the top and examined it for gas. The air circulated freely. I was not always with Todd when he examined the place.

The Coroner said: "the witness was not to be depended upon, for it was evident he said anything that was put into his mouth.

Mr. Folkard said that "having made that plain he would not ask him any more questions.

By Mr. Philipson. "It was my duty to attend to the lofting. I always went to the top, but never found any gas. Todd may have been a hundred times at the place for anything I know.

William Armstrong said: "I am a mining engineer, and live at Pelaw House. I was not present until the pit was walled in; but I have been in and examined it thoroughly since it was reopened. I saw the gas pipe which had been destroyed, and the place at which the shot was fired; the break in the gas pipe being 20 yards from the shot. I then came to the north way end, and saw abundant evidence of great force, and some few evidences of fire. I then came to the Main Coal staple, and found it disarranged. The blast had evidently got room for expansion and gone up the pit. In no one instance could I observe the stone stoppings destroyed. They were pushed over, but no perforation had been made. I then came up to a crossing at No. 2 bank, which had been blown out, and there were plenty of indications of the blast having gone out-bye. At the crossing there was a high recess, which had been occasioned by a trouble running across, and the cross-timbers were there intact. The roof then came down to the level of the seam, and shortly afterwards we came on the second fall, which extended to the wheel of the incline, which was heavily timbered. We then passed on to the stables, and immediately we passed the incline wheel there was plenty of evidence that the blast had passed in-bye. At the stables the brattice wall had been destroyed and carried in-bye. In the hay board I found a truss of hay unconsumed, and ashes of hay that had been consumed. A 'cog' on the opposite side of the way had been burnt down. In the in-bye side of the hay board there were evident signs of fire. The fire must have been intense, as the coal was coked a considerable distance into the seam. Beyond this was a hay-rack 10 or 15 yards long, and it was partly consumed; the hay totally so, and the timber on the opposite side had evidently been on fire. There were no signs of fire or blast or injury beyond the caution board. It had exhausted itself there and passed into the return. I was quite satisfied that the seat of the explosion was at the fall at No. 2 bank-head. At the out-bye side there had been a very considerable fall of stone. The frames of the stone there were five or six feet thick, but much less on the in-bye side. The timber had been placed in the wall side at short intervals. There seemed to be no mode of ventilation except the stopping of the tubs on the bank head, and this would throw the air up and so ventilate the top. The only way I can account for the explosion is that a large quantity of gas has been lying behind a layer of stone, and so forced the stone and timber away, and found its way into the air-way. The initial force of gas is very large, and the force would immediately mix with its complement of air. The master shifter was found near, and it is immaterial whether his lamp was open or shut. If it was open the gas would explode, and if not the gas would burst through the lamp. No Davy lamp can resist more than eight feet a second pressure. My impression is that

there has been no *collection* of gas in the lofting. I think it is impossible to ascertain the initial velocity of gas. I did not examine the crossings 300 yards from the shaft, near the water standage. I think it is impossible any explosion could occur where Hutchinson fired his shot; and I am therefore brought to the conclusion that it was caused by the pent-up gas forcing the stone down. I found no symptoms of fire at No. 2 bank-head. I think the explosion and the firing of Hutchinson's shot was merely a curious coincidence. Supposing there had been an accumulation of gas in the lofting, and a depression of the barometer took place, the gas would have come down towards the lamp. I heard Taylor's description of the mode of cleaning the loft, and I consider his examination good enough.

By Mr. Willis and Mr. Dickinson. "I hold that the pressure of gas would force the fall. Some of the frames of stone which had fallen at the bank head were five or six feet thick. I do not believe there could be any accumulation of gas at the lofting to cause an explosion, because the tubs always stood under it before going down the incline, and would force the fresh air through it very frequently. I have known many instances in my practice of these outbursts of gas. The initial force of gas has not been determined, but it is very large, and when mixed with air highly explosive. We have evidence that the master shifter (Spence) was found a short way above the fall, and whether his lamp was open or shut was immaterial. If open there would be a light for the gas to fire at; if shut it would be burst open by the pressure of the gas. There would be an enormous expansion of gas, for 100 cubic yards of gas would be immediately expanded to 28,000 cubic yards of highly expansive air to find an outlet, in-bye, and out-bye. I account for the scorching of timber at the more distant points by the theory that particles of fiery coal dust would be carried along by the blast with velocity, and deposited at various points. Even if the mode of examination in the pit were lax I hold there is no other way in which this explosion could have been caused than that which I have described. With 78,000 feet of air going past, it was not possible that the pit could have fired at Hutchinson's shot, and I do not think that shot could have forced out sufficient gas to cause an explosion. It was an outburst of gas which caused the Jarrow explosion in 1830, and that is the first instance of the kind I have experienced. As to the fire I do not think that in the absence of water it was possible to put it out. By carrying in air past the fire they would only have driven in the gas and killed the men the sooner.

By Mr. Folkard. "It would not be possible to get the men out. The explorers might well be alarmed at the fire. The whole pit was saturated with gas. They did right to turn back from the fire. Once, as an explorer, I was placed in a similar position myself. We came up to a blaze of fire, and I can assure you that I was not more than three minutes in getting out of the place. It would be a case of extreme hazard, and the witness who has said that he had no fear does not, in my opinion, possess a man's feelings. He must have had fear under such circumstances. I think the lofting ought to have been examined once a fortnight. The mere holding up of a lamp in the lofting would have been sufficient to detect the presence of gas.

Matthew Ranson said: "I am a stoneman. In the January of 1871 I worked at the lofting where there had been a fall. Temporary timber was at first put in, but in the February following permanent timbering was put in. The baulks were 12 by 14 inches square. We continued to work at the lofting till April, and during that time we generally worked with a naked light. Occasionally we used a paraffin lamp.

By Mr. Willis. "I never saw any gas; a good current of air passed through the top of the timbering. When the tubs were there the current was rather stronger.

John Dunn said: "I am a coal miner and work in No. 3 pit. After the explosion I went to the pit and asked Mr. Thompson to allow me to go down. Five or six other men went down with me. We went to the drift of No. 2, but we could see nothing but the broken gas pipe. We could not remain in the pit on account of the stythe. I never heard of any complaint about the ventilation. My father was one of the men who was killed. I did not wish to search further for my father, because I could not get in-bye. I think that all was done that could be done. I have never heard the men complain of the ventilation of No. 3 pit; there was always plenty of air where I was.

William Hepplewhite said: "I am a gamekeeper. I went down the pit on the day the bodies were found. I saw that the stables had been on fire. I saw a piece of hay and three pokes of corn in the hay board. I also saw a prop which had not been burnt through. I went further in and saw all the bodies. I saw that two doors had been opened to let the after-damp go down there. I found my father's body behind a door away from the flat. A tin of grease was close beside him. The small opening round the door had been filled up to prevent the after-damp getting into the place. My father was

in the Downs explosion, but came round by the returns and so escaped. I believe the watches had stopped at 10 minutes to 6. A figure "6" was chalked close to the hands of one of the bodies. I found no writing whatever where my father lay. I believe the men had lived for a considerable time after the explosion, as the way where they were found was much trodden down. There were also seats in the wall side, where the men had been sitting. The coal was burnt a little at the in-bye and out-bye side of the stables. I do not know anything more relative to the explosion.

Mr. Smith. "Are you satisfied that all was done that was possible to save your father? No. I would rather have seen a second attempt made to get to the men. I heard the men say that morning that they were afraid to go into the pit.

Mr. Willis. "Are you a pitman? I was until I was 16 years of age. I am now a gamewatcher. Supposing the fire could have been got out do you think the men would have been recovered alive? Yes. How do you arrive at that conclusion? Because the men had lived so long. You may suppose they had lived for a week, but are you of opinion, knowing that there was fire-damp and smoke in the returns, that the men, supposing the fire had been overcome, could have been got out alive? My opinion is that the fire could have been got out; the smoke had gone through the open doors.

By Mr. Smith. "The whole of the men had their clothes on.

By Mr. Willis. "My father had two or three lamps beside him, and I believe he was the last man alive. I have not given my opinion about the likelihood of getting out the men without considering the ventilation.

By Mr. Folkard. "I know this pit; there was a cistern of water close to the seat of the fire. The water was close opposite the fire; it was on the right hand side of the hay board.

Mr. Folkard. "Did you see the boards produced by Mr. Dakers? I did not. All I saw was the figure 6* written on a piece of slate lying opposite one of the men's hands. I saw several of the men's watches; the last one stopped at 10 minutes to six o'clock. I think that watch belonged to Bousfield.

Mr. Willis. "The watches do not indicate much.

By Mr. Folkard. "At the time I worked in the pit Mr. Burns was viewer. I frequently saw Mr. Burns examine the bank head. I never saw any gas at the place. I do not know whether Mr. Burns ever found any, but I was only a young lad at the time, and the officials never let us know anything about the gas.

Mr. Philipson. "You saw the two doors standing open with your own eyes? No, I did not, but their position was described to me by men who have lost their friends in a similar way to these men.

Robert Todd, who stated that he desired to make an explanation with regard to the evidence of the witness Taylor, was recalled. He said: "I think my evidence with regard to the lofting has been misunderstood. Really there was no lofting at No. 2 bank head, because the timbering at that place consisted of baulks of wood; there was not a close lofting; there was a passage between the timber and the roof, there was a space of three feet between each baulk, and there was plenty of room for the air to go through. I properly examined the place once a fortnight. Taylor has stated that he has frequently seen me at the lofting, but he (Taylor) has only once met me there in his life. We worked on different shifts. I went on to the timbering once a fortnight, and whenever I found any dust upon it I gave instructions to Taylor to keep it clear. I never told him to examine the place for gas. If there had been any accumulation of gas I could have seen it from the top of the timbering. I put my lamp right to the roof of the place.

George Turnbull said: "I was down in the pit on the day before the explosion. I examined all the ways near the water standage. I did not find the slightest symptoms of gas. I do not make daily examinations of the standage. I examine it twice or thrice a week.

By Mr. Folkard. "The overman could have gone and seen the stoppings if he liked. I do not know whether he ever did, but he could go to any part of the pit. It is my duty to examine the stoppings referred to by Mr. Dickinson, but I do not know if it is likely that the overman would do what it was my duty to do.

Michael Kennedy said: "I am a stoneman. At the time of the explosion we were working in the new No. 1 pit. I heard an explosion, and I said to my companions, 'There is Hutchinson's shot gone!' Shortly afterwards there was a great rush of wind, and I was thrown down. After I came to myself I groped about and felt a tub.

* This has since been explained. The searchers had instructions to chalk or otherwise mark a number near to each body when found; thus the figure 6 indicated that the remains near it were those of the sixth body found during that "shift."

By Mr. Willis. "There was only one rush of air. We did not feel anything after the first report, but we lost the fresh air after the rush of wind; the rush of wind went in the opposite direction to the ordinary ventilation; it afterwards came right and took a 'suck,' and then ceased. We heard a distinct report before the explosion, and both my marrow and myself said, 'There is Hutchinson's shot gone off.' We just had time to say these words. I cannot tell how the fire came there, but I cannot see how the pit would have fired at Hutchinson's shot, because there was no gas where he was working.

John Peart said: "I am a coal miner. I was with the last witness when the explosion took place. About half-past eleven o'clock I heard the report of Hutchinson's shot, and shortly afterwards felt the wind a little. About four or five minutes afterwards a second explosion occurred. Altogether I heard two explosions after Hutchinson's shot; there was a distinct sound of a second explosion in the workings. I said to Kennedy, 'She's fired at Hutchinson's shot.' Almost immediately afterwards I felt the first explosion.

By Mr. Willis. "I do not think a minute would elapse between hearing the report of Hutchinson's shot and the second explosion. I had just time to say, 'She's fired;' the first was a heavy explosion, but the second was not so severe. I know that between four and five minutes is a long time, but I think that time would elapse between the first and second explosion in the workings.

By Mr. Folkard. "It is my firm opinion that the gas fired at Hutchinson's shot. I have seen the standage, but not since the explosion.

The Coroner at this stage of the proceedings asked if any of the hewers wished to be examined.

Robert Straughair came forward and said: "I am a coal miner and have worked in No. 3 pit for the past two years. I have worked in many pits in my time, and I have repeatedly made the observation that I never worked in a better ventilated pit in my life. My son was killed by the explosion, but I am of opinion that the fire could have been overcome with a little perseverance. I was not one of the exploring party. I was down the pit on the day the men were got out. I was also on the spot shortly after the explosion, and went down to the main coal, but I was not opposite the bank head on that day. Men were allowed to go down till the standing fire was discovered. After that time men were prevented from going down. I know that a fire always takes up some of the air, but in this case I think the ventilation, if an effort had been made to get through the fire, would not have been much interfered with. I think the men might have been got out if a little perseverance had been used.

Mr. E. F. Boyd, viewer, described the appearance which the pit presented on his examination of the workings after they had been re-opened, and gave evidence in confirmation of Mr. Armstrong's view of the cause of the explosion: "He believed there had been at first a small fall of stone, and Spence had sent the boy in-by for assistance; then a further fall had taken place and liberated the gas, which had ignited either from his own lamp or the paraffin lamp; the explosion could not have taken place where Hutchinson's shot had fired, because if there had been any accumulation of gas there, it would have fired at the naked light by which Hutchinson fired his shot; he believed the explosion had taken place after the fall; he considered it impossible that the men could be alive; the fact that one man died at seven o'clock led him to believe that the others had not lived many hours after that; there could not be that much difference in the men's constitutions.

By the Coroner. "I have examined the place where Hutchinson fired his shot; from all I could see I have no reason to conclude that there was any gas at that place; the current of the air was very strong. I think Kennedy must have been under a delusion. He must have confounded Hutchinson's shot with one of the explosions.

By Mr. Willis. "I think the explosion took place after the stone fell, because the edges of the stone were covered with dust and dirt. It is freestone, and dust would not have clung to it unless there had been some great disturbing force.

By Mr. Dickinson. "I examined the gas pipe and saw that it was broken. I do not think it is possible for gas to have escaped from the pipe in a sufficient quantity to account for the explosion.

By Mr. Folkard. "I approved of what had been done by the viewers. The men simply repeated the statements they have given in evidence at this enquiry. I have heard their evidence, and think there is nothing but what is reasonable in it. An explosion might have taken place at any moment. We have many instances of a second explosion having taken place; the latest is the Oaks. He would be a bold man who would go down a pit where there was a standing fire.

Mr. R. F. Matthews, viewer, "agreed with the previous witnesses as to the cause of the explosion, which could not have occurred in the standage; he had satisfied himself upon that point by an examination.

"He was one of the viewers at the consultation, and they came to the conclusion it would be a waste of life to make further efforts to get past the fire; from all that they knew now he thought they would only have killed the men the sooner by forcing the smoke and afterdamp upon them. They had not died of starvation but would be suffocated by the afterdamp.

The Coroner. "Is there any part of the evidence of Mr. Armstrong or Mr. Boyd that you differ from?"

"There is only one thing I would add. If the gas pipe had been broken by Hutchinson's shot, and the gas had taken fire, I think it would have burnt itself out in the ordinary way. I feel quite certain that the explosion took place at No. 2 bank head.

Mr. John Taylor, of Ryhope, agreed with the other engineers who had been examined as to the cause of the explosion. He was on the pit heap about half-past twelve on the Thursday and saw the men come to bank and report the existence of fire; they were in a very excited state when they came up. At the consultation at the office they heard what the two overmen had to say, and concluded that if the fire was allowed to go on a tremendous explosion might occur. They did not ask for volunteers to go down the pit at all, the men seemed to be panic-stricken. He believed if they had taken more air into the fire there would have been another explosion, and lives would have been lost. After examining the pit and ascertaining the extent of the fire, he was still of the same opinion that it could not have been extinguished; he would not have ventured to such a place himself, and would not have asked anyone else to go. He would not have asked any set of men to go in, because if anything had occurred to them he would have felt himself morally guilty of murder. He would not have undertaken the responsibility of risking men's lives in such an enterprise. He was check viewer on behalf of Mr. Gregson in that part of the pit, and therefore his interest was against that of Earl Vane in the matter. He was convinced that the explosion had taken place at the point already indicated, in consequence of an outburst of gas. He did not think there would be any collection of gas in the lofting, but would have such a place narrowly examined. If gas had accumulated, there would have been an explosion before at the paraffin lamp.

Mr. Lindsay Wood was next called, and gave evidence corroborating the view of the other engineers as to the cause of the explosion. He was present at the consultation in the office, and the decision to seal up the pit was the only way to save the mine. He was satisfied there could not be anyone living in the pit. The after-damp was excessively strong in both returns. He had not heard before of any outburst of gas in this pit. It was not uncommon in adjoining collieries.

Mr. Wood was questioned by *Mr. Dickinson* as to the possibility of Hutchinson's shot having drawn a sufficient quantity of gas from the drift and standage in the immediate neighbourhood to cause the explosion, *Mr. Dickinson* adding that they had it in evidence that this place had not been examined on the day of the explosion. *Mr. Wood* held that the accident could not have occurred in this way, and adhered to the theory he had already given expression to. The indications they had found in the workings as to the course the blast had followed were consistent with his theory, and if the explosion had happened in any other way the indications would have been quite different.

Mr. T. E. Forster also gave corroborative evidence, adding that in his opinion the stone roof at the bank head had got weakened, so that the pent up gas had burst out. After the consultation he was quite satisfied that the resolution to seal up the pit was correct, and he might say that *Mr. Willis* coincided with him. He believed that more air would have caused the fire to increase so rapidly that they could not have overtaken it. He once worked on with a similar fire six weeks, but failed to get it extinguished, and had to close up the pit after all. He would not like to have asked any man to have ventured through the fire.

The Coroner asked if either of the inspectors wished to be examined.

Mr. Willis did not ask to be examined, but if the jury were desirous to hear him he was ready to give his opinion.

A jurymen expressed a wish to hear the evidence of *Mr. Willis*.

Mr. Willis was accordingly sworn, and said he had examined the pit on more than one occasion since the explosion, and from the indications he had seen he agreed with the evidence given by the mining engineers that day. He believed the explosion came from the spot they had indicated, and did not think it possible for a large accumulation of gas to take place in the lofting, nor did he think if the gas pipes had been broken for a length of time before Hutchinson's shot was fired that gas would have collected in a sufficient amount to cause such an explosion. Moreover, it must be remembered that 78,000 feet of air per minute were passing this point (*Hutchinson's* place), divided into four splits, and if the pipe being broken would have rendered this air explosive, it would have

exploded in all the four districts into which it went, and not alone in the Silksworth way, and there was not the slightest trace of explosion in any other part of the pit. He confessed it was difficult to find an adequate cause for the outburst of gas, and yet it was the only conclusion he could come to that there had been such an outburst. He found it difficult to account for the quantity of gas, for it was not in evidence that the seam or strata had been subject to such outbursts before, although it has frequently occurred in adjoining collieries.

With regard to the fire and the sealing up, he got to the office at 4 o'clock on the Thursday, after Mr. Taylor had left, and found the gentlemen who had given evidence to-day, together with Mr. Hepplewhite and Mr. Turnbull, who had been in the pit. He heard all about it and heard what the viewers had decided, and expressed his concurrence in the view they had taken, after having also examined Dawson and Laws on the subject and questioned Mr. Turnbull as to the surroundings of those stables. Nothing that could have been done from the outer end would have tended in the direction of saving the men's lives. On the contrary it would have tended to shorten their lives.

By Mr. Folkard. "He would have been disposed to have examined the lofting more frequently than once a fortnight, but if the pit had been his, he would not have had any such thing there. He would have put arches in place of timber. His more frequent examinations would not have been with the view of finding gas, but to see to the safety of the roof, and the prevention of falls. He did not think any gas could have collected there, as it was not a close lofting, and was very well ventilated.

The Coroner then asked the jury to retire to another room to consider their verdict, and in doing so said they had given such great attention to the evidence that it was unnecessary for him to recapitulate it. He would only call their attention to two things: first, the examination of the lofting and timber at No. 2 bank; and secondly, as to the sealing up of the pit. If in their verdict they would give an expression of opinion on these two points it would be more satisfactory.

The jury then retired at half-past five o'clock, and returned in half an hour with a verdict in writing, which the foreman, Mr. Smith, read as follows:—"The jury are unanimously of opinion that the deceased met their deaths accidentally from an explosion caused by an outburst of gas from the roof of No. 2 bank head of No. 3 pit. We are of opinion that there has been no negligence in the examination of the lofting or timbered cavity where the fall of stone occurred, inasmuch as there never has been the slightest appearance of the presence of gas in that place and the ventilation was found to be perfect. After hearing the evidence of so many eminent and experienced mining engineers as to the propriety of closing up the pit, we are of opinion that it was the only safe means to pursue."

The proceedings then terminated.

Falls of Coal and Stone.

Under this head it will be observed that the number of casualties and of lives lost is in each case less by 6 than in last year. The deaths in this class are thus divided:—deputies 8, hewers 15, putters 5, trapper 1, and wasteman 1.

In this district it is the universal custom to employ men (deputies) whose special duty it is to attend to the proper and safe timbering of the working places, and it is only in cases of emergency that the hewer is expected to place timber for the support of the roof, &c., and then only to do so temporarily until the deputy reaches the place on his round of examination. The deputies, generally speaking, are careful steady men, but it will be seen from the above figures that, although their special work is to see to the safety of the hewers (particularly) and others, they are not able at all times to protect themselves. Accidents to deputies generally arise when drawing the props, &c. from places which have been driven the required distance, which is at best a dangerous work, and one requiring great judgment, strength, and activity.

The accidents to hewers very frequently arise from an over anxiety to get coals; and, although it often occurs that a man is quite aware that the roof will be much safer by his setting a prop or two he will sometimes continue his work, thinking either that he will have a more favourable opportunity by-and-bye, or that the deputy will, in the course of his rounds, be in the place in a short time—in the meantime the stone falls.

The accident No. 13 on the list occurred to a trapper boy aged 10 years. He had a wish to improve the comfort of the place in which he sat attending his door during work hours, and for this purpose had procured on more than one occasion a hewer's pick, and had removed some coal from the side and underneath a large stone. He had been corrected (thrashed) for this by the overman repeatedly, and notwithstanding this he repeated the offence and the stone fell upon him.

Previous to the inquest upon the body of the boy I had an anonymous communication to the effect that he was only *nine* years of age. At the inquest I had the father called and sworn, who stated very circumstantially as to dates, &c. that he was 12. At my request the viewer of the colliery procured his register of birth, which proved him to have been 10 years old.

No. 25 accident. This might have been, very properly I think, omitted from the list, inasmuch as the injury he received developed a latent disease of which he died; otherwise the injuries were not of such a nature probably as to have caused death.

No. 49 accident. The cause of death in this case was the penetration of the brain by a pick point, the moving cause being a slight fall of coal.

The other cases were of an ordinary character from which the only lessons to be learnt are, that too much attention cannot be paid to roofs which show the slightest indication of danger, and that strict discipline with regard to examinations and timbering by deputies should be rigidly enforced.

It is very satisfactory, and speaks loudly in praise of the care exercised generally in the district, that it is in this class of accidents that the decrease in the number of casualties already spoken of is found, notwithstanding the large increase in the quantity of coals raised and persons employed, to which it may be expected they will always bear somewhat relative proportions.

Overwinding.

No. 11 accident. This case showed an utter want of discipline, and an unaccountable ignorance of the requirements of the law.

Richard Gill was in charge of the winding engine at Vane's Hartley Colliery. A signal had been given from the bottom of the pit indicating that men were to be drawn up, and just at this moment Gill saw a friend of his, Robert Croudace, who had previously been in charge of the engine for six years, pass the door, and asked him to come in and draw "them" up. Croudace, who admitted at the inquest that he heard the signal for "men on" did so, and from some cause or other drew the cage to the pullies, when two boys who were "riding" were thrown out, one falling on the "flat sheets" without injury, and the other falling to the bottom of the pit, by which he was killed. All the special rules, with which I am acquainted, forbid any person in charge of an engine allowing another person to "take the handles" unless by authority from the engineer. I found in the course of the inquiry that not only had Gill never been supplied with rules, but that special rules had not been established as required by the Act, although the colliery had been working for some years.

By your authority I instituted proceedings against the agent (and part owner) of the colliery for non-establishment of special rules. The case was to have been heard before the justices at Barnard Castle, but in consequence of there being only one magistrate present and of the infrequency of more than one attending the court, it was suggested that with your sanction a fine of 5*l.* and costs be inflicted, which was agreed to.

Overwinding is of very rare occurrence in this district. There have been many attempts to introduce contrivances for detaching the rope in such cases, many of which have had fair trials, but have ultimately been abandoned for various reasons, more particularly because it is adding to the risk of accident by having more machinery to examine and keep in repair, and that such contrivances are liable to induce a degree of carelessness in the person having charge of the engine. Most of the plans if not all with which I am acquainted have only provided for detaching the rope, other provision by keps on the pulley framing, or by catches on the cages, being required to prevent the cage falling to the bottom of the shaft. Of late years, however, an invention has been introduced called "Ormerod's link," which not only detaches the rope but at the same moment and by the same apparatus suspends the cage, and thus prevents further mischief of any kind. These are being rather largely introduced, and I have been made acquainted with several instances where they have prevented much destruction of property, and some cases in which by their use many lives have been saved.

No lives have been lost during the year from "ropes and chains breaking," "whilst ascending or descending," "falling into shaft from surface," or from "things falling from surface."

Falling from Part Way Down.

No. 24 accident occurred in a shaft in process of sinking. Some work in the shaft, in which a "whole cradle" (a platform nearly the same size as the shaft and hung upon chains attached to a "crab" rope from the surface) had been used was finished, and the workmen were about to commence other work, in which it was necessary to use a "half

cradle." To free the main or whole cradle from the crab rope so as to have the latter for use with the half cradle, two planks of timber were placed on the top of the "tubbing" and underneath the whole cradle, which was then lowered on to the planks; the rope and chains were then taken off and attached to the half cradle, which was used for some time a few fathoms above where the whole cradle was resting. The charge man was at this time called to bank, and went up the shaft in a "kibble" by means of another rope, leaving instructions with the men not to lower the half cradle for any purpose far enough down to rest on the main cradle. These instructions were neglected, and on the charge-man, accompanied by the engineer, returning in the kibble, they found the half cradle resting on the whole cradle and with the chains quite slack, and immediately on both stepping out of the kibble (which had been stopped), one of the planks broke and upset the cradle, causing four of the men to fall to the bottom, a distance of 15 fathoms. One was killed and another died afterwards.

It was very wrong to leave the whole cradle resting on planks, especially as it was so near the bottom that it could have been lowered there where it would have been safe, in a very short time. I am strongly of opinion that cradles should not be in a shaft except when attached to the crab rope, and I have consequently since refused to recommend the establishment of sinking rules unless a rule to this effect was inserted, and to which I have not had an objection.

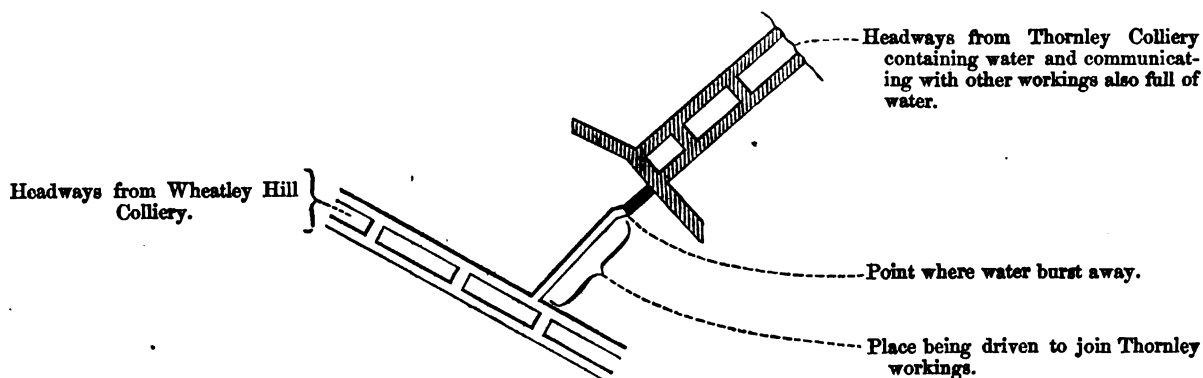
No. 54 accident. This was also in a sinking shaft. Two cradles were in use; one on which two men were employed a little higher up the shaft than the other, on which were other men; some skylarking of a very dirty description had been going on. By-and-bye one of the men from the lower cradle was being drawn to the surface, and immediately on passing the upper cradle poured some water on the two men, and one of them trying to escape the water slipped and fell to the bottom.

Sinkers are generally strong healthy young fellows, and usually fond of practical jokes. It is important that charge-men should check as much as possible any tendency to this kind of thing in such dangerous positions.

Irruptions of Water.

Under this head three casualties have occurred, causing the loss of eight lives, and it is not too much to say that not one of them should have taken place.

No. 5 accident caused the deaths of five persons. The Wheatley Hill Colliery had recently reached the coal at the "dip" portion of the royalties belonging to the Original Hartlepool Collieries Company, who are also the owners of the Thornley Collieries, which are considerably to the "rise" part of the royalties. Holings had been effected between the workings of the two collieries, principally for the purpose of freeing portions of the Thornley Colliery from water. These holings did not free (nor were they intended) a certain somewhat detached part of the Thornley workings; and to effect this another place was being driven to join a pair of headways shown by the sketch below.



The plan of the Thornley workings showed the headways to have been left in the position shown above by the shaded portion of the sketch, whereas in reality the part marked black (about 16 yards) had been driven before abandoning (for the time) these workings. It will thus be seen that so far as was known to the then management, there was a face of about 80 yards nearly at a right angle to the advancing place to be driven against. Had such been the actual position a "front" bore hole kept a few yards ahead would undoubtedly have been a sufficient protection. Whilst the place was being driven bore holes were kept in advance,—front holes of three yards and flank holes of two yards at

an angle of 45° ,—it being considered from the hardness and compactness of the seam and from the known "head" of water in the drowned workings that holes of such length would allow a sufficient amount of coal to be between the workman and any place tapped by the bore holes to keep him safe. There had been great irregularity in boring these flank holes; sometimes they had been bored and at other times only the front hole had been kept going. On the night before the accident a flank hole on the left side only had been put in and none on the right side. It is beyond doubt that with the lengths of holes and the angle of the flank holes already mentioned, neither of them would have struck the headways against which the place was being driven; at the same time, although such lengths would have ensured sufficient intervening coal, this should not have been the only consideration in determining the lengths of the holes. The area of ground covered by the advancing holes and the consequent greater certainty of holing into workings ahead or on either side of the place being driven is of great importance. Under the supposition of the 80 yards' face, which was expected according to the plan, there is some excuse for having the flank holes only two yards in length. Bore holes of this kind should not be less than six to eight yards in length, the flank holes at not more than five yards distance from each other, and probably a less angle than 45° , would be of greater certainty, but there is often some difficulty in commencing holes at a less angle on account of the cleavages in the coal. Where there is any doubt as to the accuracy of the plans, or where there are no plans of old workings, these lengths should be increased to not less than 10 yards and the flank holes three yards apart. This case is also important from the fact of the coroner's jury finding a verdict of "manslaughter" against William Spencer (chief viewer), William Hay (resident viewer), and Thomas Watson (overman), who were bound over to appear at the Durham assizes.

The case came on for hearing at the March Assizes before Baron Martin, who in charging the grand jury observed that, he did not think any bill would be preferred as the only evidence which the coroner's jury seemed to have had to give colour of warrant to their proceedings was that of the three persons themselves against whom their verdict had been found. The bill was, however, preferred and was thrown out. Counsel for the prosecution wished the case to proceed on the coroner's warrant, to which the judge consented.

After hearing a few witnesses his Lordship remarked that "at present there was not a shadow of a case," upon which the prosecution was withdrawn, the learned judge observing, "after an experience of 20 years on the bench, he had never known a case carried on on the coroner's inquisition after the grand jury had thrown out the bill," and ordering "the costs of the case" to be stopped.

No. 6 accident. This resulted in the deaths of two persons. A panel of coal was being worked towards a rise trouble of 12 feet, on the top side of which were workings known to contain water. The hitch or trouble had been proved on the rise side by sinking a staple down to the seam below, and this staple had not been marked on the plan. It was not intended to make any communication between the workings on the low side of the trouble and those on the high side, and therefore as there would be at least four feet of strata between the top of the seam at one side and the bottom at the other, it was thought unnecessary to bore holes in advance of the workings, apparently forgetting altogether about the existence of the trial staple. One of the low side or new working places holed into this staple, and let the water off with the result as above stated.

It is quite probable the man and boy who were drowned would have escaped, but in the general rush of the other workmen some one had taken the man's lamp and left them in the dark. The quantity of water set at liberty was comparatively small.

In the first place the staple should have been shown on the plan; and, as the same officers were in charge of the pit as when the staple was sunk, and ought therefore to have remembered its existence, bore-holes should have been driven in all the approaching places contiguous thereto.

No. 23 accident. A pair of headways at the top of a staple from the lower seam in approaching a trouble had met with a very large feeder of water, which was likely to overpower the existing pumping arrangements in that district of workings, in consequence of which it was determined to put in "dams" to keep the water back until new pumps could be applied. For this purpose a wooden "dam" was placed in each headway, made of 12 inches square baulks of the same length as the width of the place (6 feet), and placed longitudinally; immediately behind these were two upright baulks of 12 inches square, about three feet apart and sunk into the floor and roof, and tightly wedged up; these again were strengthened by half baulks strutted against them and sunk into the floor. After the dams had thus been built and carefully wedged leaks were discovered in various parts of the wedging as the head of water increased, and as soon as seen more wedges were

inserted. A short time before the bursting away a leak had been discovered, which could not be further wedged until one of the upright baulks was removed; this was done, and the pressure of water moved the longitudinal baulks about 6 inches back, thus disturbing the packing and wedging at the ends between the coal and the timber, causing a weakening of the whole structure. The deceased and another man then went in and replaced the upright stay, but instead of removing the displaced packing and wedging, and putting it in anew, merely tried to make it up again by further wedging, and whilst doing so the dam was altogether removed and the rush of water washed the men away; one who was saved being forced into a cross holing, and the deceased to the top of the staple already mentioned, down which he fell.

The "dams" should have been set into the sides such a distance as the nature of the coal required, in addition to placing the upright baulks and struts behind it; and as this was not the case it was a fatal error to remove the upright baulk when the water had been accumulating in pressure at the other side for a length of time.

"On Inclined Planes and by "Trams and Tubs."

This class of accident, although the cause of the loss of a great number of lives, does not call, in any of the cases, for any detailed remarks. They arise principally from carelessness on the part of the men themselves, and very frequently from disobedience to the special rules. All the special rules in this district I think disallow riding in or on the tubs, but in many cases the practice is "winked at" by the officers of the mine, and in fact many of the officers themselves ride. When I have found such to be the case I have always recommended a strict enforcement of the rule; or in certain cases to apply for an alteration of the rule, and permit the men to ride. This may appear somewhat anomalous, but I know of instances, especially on long inclines, where riding was prohibited and strictly enforced, and where accidents were very frequent indeed. So soon as the prohibition has been withdrawn accidents have become unknown. This arises thus: when men and boys going to or returning from work find a set of tubs going in their direction, and no officers of the mine about, they determine to ride; perhaps when the "set" gets into quick motion a light is seen in the distance, and supposing it may be carried by a charge-man they are very liable, to prevent being caught in a breach of the rules, to jump off; this I believe gives rise to a great number of accidents.

By Machinery Underground.

No. 31. This was a case in which a trapper boy was supposed to have been playing with an engine plane tail rope wheel, having left his door, at 10 or 12 yards distance, for this purpose. The wheel was situated in the seam of coal, which is four feet high. It was well fenced, the largest opening being near the roof of the seam, about 10 inches deep by two feet in length, the opening being left for convenience in oiling. Whilst it was in motion he had fallen amongst the spokes and was literally torn to pieces. It was no part of his duty to be near the wheel.

No. 68. It was given in evidence in this case that the boy was swinging on a rope attached to the "drum" of a self-acting incline for the purpose of causing the sets of tubs to start more readily; a practice much to be condemned, but it is sometimes permitted. I believe, however, the "sets" had already started, and he was swinging on the rope for amusement. I am led to this belief by the fact that after he got fastened by the rope the drum revolved five or six times before stopping, coiling the rope on to his body, and which would not have been the case had the "sets" been starting.

The remaining accidents do not call for any special remarks, as they are sufficiently detailed in the observations on the list.

I have during the year received several notices of "serious personal injury," but none of them of sufficient importance to call for detailed remarks; many of them have, however, been of sufficient gravity to require my examining into the causes, and in some cases I have been able to recommend such steps to be taken as will I trust lead to a diminished likelihood of fatal accident arising from similar mishaps.

I have also received complaints from the workmen in a few instances principally relating to inadequate ventilation. In most of the cases such complaints were well founded, and in all of them I made careful inspections, and where necessary such recommendations as would in my opinion lead to a better state of things; and I am glad to say all my recommendations have been or are being carried out.

By your instructions I commenced proceedings in November last against Mr. W. Hedley, one of the owners of Craghead Colliery, for not having provided "proper means

“ of communicating distinct and definite signals from the surface to the bottom of the
“ shaft.” The case was heard before the justices at Lanchester Petty Sessions on the
8th December, when Mr. Hedley was fined 5/. and costs.

I have, &c.

J. WILLIS,

Inspector of Mines.

To The Right Hon. H. A. Bruce, M.P.,
H. M. Principal Secretary of State
for the Home Department,
Whitehall,
London (S.W.)

LIST of the FATAL COLLIERY ACCIDENTS, and LOSS of LIFE arising therefrom, in the SOUTH DURHAM MINES INSPECTION DISTRICT, during the Year ended 31st day of December 1871.

Date.	No. of Accidents.	Name of Colliery.	Where situated.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death and Remarks.	Number of Lives lost.						
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above Ground.	Total.	
1871.															
Jan. 11	1	Bishop's Close	Ferry Hill	Weardale Iron & Coal Co.	Richard Rowley	Fireman	48	Fell off heapstead	-	-	-	-	-	1	1
" 16	2	Old Durham	Durham	Earl Vane	Richard Wanless	Putter	16	Got entangled with hauling rope	-	-	-	-	-	-	1
" 16	3	Kepler	Ditto	John Thwaites	William Dobbison	Ditto	14	Fall of roof	-	1	-	-	-	-	1
" 21	4	Elmore	Fence Houses	Hetton Coal Co.	Thomas Fishburn	Horsekeeper	67	Kicked by a pony, died 22nd Feb.	-	-	-	-	-	1	1
"	5	Wheatley Hill	Ferry Hill	{ Original Hartlepool Col- lieries Co.	{ James Hall John Bell Robert Smith John Walker George Cooper	{ Hewer Ditto Ditto Ditto Putter	{ 42 29 29 25 13	{ Influx of water, caused by unex- pectedly holing into workings known to contain water.	-	-	-	5	-	-	5
" 24	6	{ Seaham, No. } 1 Pit.	Sunderland	Earl Vane	{ Wm. T. Candlish George Charlton	{ Hewer Putter	{ 43 16	{ Ditto Ditto	-	-	-	2	-	-	2
Feb. 3	7	North Bitchburn	Darlington	H. S. Stobart & Co.	John Tyerman	Hewer	-	Fall of stone; died 10th February	-	1	-	-	-	-	1
" 4	8	Castle Eden	Ferry Hill	William Cook	John Gray	Deputy	33	Ditto	-	1	-	-	-	-	1
" 6	9	East Hetton	Ditto	East Hetton Coal Co.	William Wray	Ditto	21	Ditto	-	1	-	-	-	-	1
" 10	10	Trimdon	Ditto	T. Wood & Co.	John Martin	Hewer	21	Ditto	-	1	-	-	-	-	1
" 12	11	Vane's Hartley	Cockfield by Staindrop.	R. Summerson & Co.	Joseph Parkin	Driver	15	Drawn up to pulley, fell out of cage and down shaft.	-	-	-	-	-	-	1
" 14	12	Newbottle D. Pit.	Fence Houses	Earl Durham	John Watson	Wailer	13	Crushed between wagons	-	-	-	-	-	1	1
" 14	13	Oakenshaw	Durham	Strakers & Love	Joseph Atkinson	Trapper	10	Improperly hewing coal and caused the roof to fall upon him.	-	1	-	-	-	-	1
" 17	14	Shotton	By Castle Eden	Haswell, &c. Coal & Coke Co.	George Smith	Deputy	39	Fall of stone	-	1	-	-	-	-	1
" 18	15	Castle Eden	Ferry Hill	William Cook	John Blenkins	Putter	17	Crushed between tub and chocks	-	-	-	-	1	-	1
" 21	16	Haswell	Fence Houses	Haswell, &c. Coal & Coke Co.	Wm. Hateley	Driver	14	Crushed by tubs; died 8th May	-	-	-	-	1	-	1
" 23	17	Whitworth	Ferry Hill	R. S. Johnson & Co.	Edward Smith	Stone teamer	13	Crushed by tubs on stone heap	-	-	-	-	-	1	1
" 23	18	South Hetton	Fence Houses	John Walker & Co.	Benjamin Wood	Engine plane boy.	15	Crushed by tubs	-	-	-	-	1	-	1
Mar. 8	19	Waldridge (Byron).	Chester-le-Street	Sowerby, Phillips, & Co.	Ramsay White	Hewer	25	Fall of stone	-	1	-	-	-	-	1
" 9	20	Cornsay	Durham	Ferens & Love	Thomas Irwin	Labourer	68	Fell into an open coal box	-	-	-	-	-	1	1
" 18	21	West Auckland	By Darlington	Bolckow, Vaughan, & Co.	Matthew James	Driver	14	Crushed by tubs	-	-	-	-	-	1	1

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situated.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death and Remarks.	Number of Lives lost.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.
1871. Mar. 23	22	Hetton, Minor Pit.	Fence Houses	Hetton Coal Co.	Daniel Matthews	Wasteman	74	Fall of stone	-	1	-	-	-	1
" 27	23	Brancepeth	Durham	Strakers & Love	Edward Brown	Stoneman	46	Bursting of dam which he was completing.	-	-	-	1	-	1
Apr. 17	24	Wheatley Hill	Ferry Hill	{ Original Hartlepool Col- lieries Co. }	{ William Leonard Joseph Farrow }	Sinker Ditto	45 43	{ One of two planks on which sinking cradle was resting broke, and they (with two others) were pre- cipitated to the bottom of the shaft, 9 fathoms.	-	-	2	-	-	2
" 18	25	West Pelton	Chester-le-Street	James Joicey & Co.	Thomas Summerson	Deputy	39	Fall of stone; accident developed latent organic disease of abdo- men; died 27th May.	-	1	-	-	-	1
" 26	26	Rainton	Fence Houses	Earl Vane	John Thompson	Driver	14	Crushed against roof when riding on a tub.	-	-	-	1	-	1
" 28	27	Trimdon	Ferry Hill	T. Wood & Co.	John Cook	Hewer	25	Fall of stone	-	1	-	-	-	1
May 3	28	Eppleton	Fence Houses	Hetton Coal Co.	James Slater	Putter	16	Crushed by tubs	-	-	-	1	-	1
" 6	29	Tudhoe	Ferry Hill	Weardale Iron & Coal Co.	Henry Chapman	Hewer	39	Improperly riding in a tub on engine plane; tub ran amain and threw him out.	-	-	-	1	-	1
" 13	30	Shildon Lodge	Bishop Auckland	Bolckow, Vaughan, & Co.	John Horden	Set-rider	16	Rope broke; tubs ran amain and joined other tubs on which he was riding and crushed him.	-	-	-	1	-	1
" 18	31	Tudhoe	Ferry Hill	Weardale Iron & Coal Co.	Edwd. Whitfield	Trapper	12	Climbing on the fencing of an in- cline wheel, where he should not have been, whilst it was running, fell among the spokes, and was pulled to pieces.	-	-	-	1	-	1
June 2	32	Haswell	Fence Houses	Haswell, &c. Coal & Coke Co.	Jno. Geo. Charlton	Hewer	26	Fall of stone; died 22nd Sept.	-	1	-	-	-	1
" 9	33	Castle Eden	Ferry Hill	William Cook	James Bainbridge	Deputy	-	Fall of stone	-	1	-	-	-	1
" 12	34	Haswell	Fence Houses	Haswell, &c. Coal & Coke Co.	John Bates	Hewer	27	Fall of stone; died 23rd Sept.	-	1	-	-	-	1
" 15	35	Wheatley Hill	Ferry Hill	Original Hartlepool Col- lieries Co.	Martin Lewens	Deputy	50	Fall of stone	-	1	-	-	-	1

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost.						
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.	
1871.															
June 22	36	Lumley, 6th pit	Fence Houses	Earl of Durham	William Turner	Deputy	48	Fall of stone	-	1	-	-	-	-	1
" 23	37	Cocken	Durham	Ditto	Thomas Cooper	Labourer	32	Tub fell out of apparatus cage upon him.	-	-	-	-	-	1	1
" 30	38	Murton	Fence Houses	South Hetton Coal Co.	John Smiles	Engine-wright.	38	Crushed by tubs on engine plane	-	-	-	1	-	-	1
July 5	39	Black Boy	Bishop Auckland	Black Boy Coal Co.	Levi Walker	Token boy	13	Improperly looking over the framing of a hoist, the cage being in motion came down upon his head and neck.	-	-	-	-	1	-	1
" 6	40	Shildon Lodge	Ditto	Bolckow, Vaughan, & Co.	Edward Brice	Waller	12	Going from one place to another, when at work, by a road which the workmen were forbidden to use, he was crushed between a truck and an embankment wall.	-	-	-	-	-	1	1
" 7	41	Tudhoe Grange	Durham	Weardale Iron & Coal Co.	James Archer	Deputy	29	Looking over into the shaft from the surface, the descending cage caught his head.	-	-	-	-	-	1	1
" 11	42	Pelton	Chester-le-Street	Lord Dunsany & partners	Joseph Best	Putter	15	Fall of stone	-	1	-	-	-	-	1
" 12	43	Adelaide's	Bishop Auckland	Joseph Pease & partners	Robert Hogg	Hewer	37	Ditto	-	1	-	-	-	-	1
" 19	44	Thornley	Ferry Hill	Original Hartlepool Collieries Co.	Michael Hagan	Horsekeeper	-	Kicked by a pony	-	-	-	1	-	-	1
" 31	45	Brancepeth	Durham	Strakers & Love	Thomas Wood	Putter	14	Fall of stone	-	1	-	-	-	-	1
Aug. 5	46	Roddymoor	Crook	Joseph Pease & partners	William Halton	Hewer	22	Going "inbye" to his work in the dark, a set of tubs caught him.	-	-	-	1	-	-	1
" 8	47	North Bitchburn	Darlington	H. S. Stobart & Co.	Geo. Rutherford	Hewer	48	Fall of roof	-	1	-	-	-	-	1
" 11	48	Morrison	Chester-le-Street	Hedley & Bell	Wm. Newton	Pick carrier	11	Fell from heapstead	-	-	-	-	1	-	1
" 12	49	East Hetton	Ferry Hill	East Hetton Coal Co.	Hugh Jones	Hewer	26	Fall of coal caused a pick to be forced into his forehead.	-	1	-	-	-	-	1
" 22	50	Newton Cap	Bishop Auckland	Owners of Newton Cap Colliery.	Robert Bell	Ditto	50	Walking up an incline (although a separate travelling road was provided), met a set of tubs and was crushed.	-	-	-	1	-	-	1
" 28	51	Whitworth	Ferry Hill	R. S. Johnson & Co.	Edwd. Cutty	Ditto	46	Riding on tubs against orders; two sets came into collision and crushed him.	-	-	-	1	-	-	1

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situated.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost.						
									Explosions.	Falls.	In Shafts.	Miscellaneous.	Above Ground.	Total.	
1871.															
Aug. 31	52	Murton -	Fence Houses -	South Hetton Coal Co. -	Thomas Clarke -	Hewer -	35	Fall of stone -	-	1	-	-	-	-	1
Sept. 3	53	Pensher -	Ditto -	G. Elliot, M.P., & Co. -	John Southern -	Screen man -	60	Fell off a gangway -	-	-	-	-	-	-	1
" 5	54	Eppleton -	Ditto -	Hetton Coal Co. -	John Robinson -	Sinker -	25	Skylarking with others, fell off a "cradle" in the sinking pit. -	-	-	1	-	-	-	1
" 7	55	Wooley -	Crook, Darlington -	Joseph Pease & partners -	Jno. Walkinshaw -	Deputy -	46	Fall of stone -	-	1	-	-	-	-	1
" 9	56	Lumley, 2nd Pit.	Fence Houses -	Earl of Durham -	Thos. Hy. Watson -	Hewer -	19	Got into a cage to descend the pit before receiving permission; was crushed between the cage and shaft framing. -	-	-	-	-	-	-	1
" 12	57	Haswell -	Ditto -	Haswell, &c. Coal & Coke Co. -	Thos. Collier -	Putter -	-	Fall of stone -	-	1	-	-	-	-	1
" 13	58	Hunwick -	Bishop Auckland -	Bolckow, Vaughan, & Co. -	Robt. Price -	Hewer -	43	Ditto -	-	1	-	-	-	-	1
" 27	59	Shincliffe -	Durham -	Joseph Love -	Lawson Lamb -	Ditto -	19	Explosion of gas -	-	-	-	-	-	-	1
Oct. 2	60	Seaham, No. 2 Pit.	Sunderland -	Earl Vane -	James Harris -	Putter -	18	Riding on ladders; head crushed against a "caneh." -	-	-	-	1	-	-	1
" 5	61	Lumley, No. 2 Pit.	Fence Houses -	Earl of Durham -	J. Pearson -	Sheave-greaser. -	60	Run over by tubs on engine plane -	-	-	-	-	1	-	1
" 19	62	Brandon -	Durham -	Strakers & Love -	F. Love Telford -	Pick carrier -	12	Playing; running tubs along a gangway, a tub fell off, the boy being inside; died 31st October. -	-	-	-	-	-	1	1
" 20	63	Wingate Grange -	Ferry Hill -	Executors of late J. Gully -	William Tucker -	Hewer -	21	Fall of stone and coal -	-	1	-	-	-	-	1
" 21	64	Old Etherley -	Darlington -	Henry Stobart & Co. -	Wm. Charlesworth -	Putter -	15	Riding on ladders; head caught by a baulk. -	-	-	-	-	1	-	1
					Thos. Hutchinson, junr. -	Stoneman -	25								
					Robinson Hunter -	Shifter -	45								
					Charles Lawson -	Furnaceman -	28								
					Thomas Spence -	Master shifter -	39								
					Thomas Jones -	Shifter -	64								
					Matthew Brown -	Ditto -	38								
					Ralph Hepplewhite -	Ditto -	55								
					George Shipley -	Ditto -	34								
					Thos. Bousfield -	Ditto -	49								

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost in Coal Mines.					
									Explosions.	Falls.	Shafts.	Miscellaneous.	Above Ground.	Total
1871. Dec. 4	74	Haswell -	Fence Houses -	Haswell, &c. Coal & Coke Co.	Patrick McCabe -	Putter -	14	Crushed by tubs -	-	-	-	1	-	1
"	75	Houghton	Ditto	Earl Durham -	John McNamara -	Wasteman -	63	Ditto -	-	-	-	1	-	1
"	76	Pelton -	Chester-le-Street	Lord Dunsany & partners	Thos. Batey -	Wagonway man.	67	Ditto -	-	-	-	1	-	1
"	77	Wooley -	Crook, Darlington	Joseph Pease & partners -	Joseph Mason -	Driver -	14	Ditto -	-	-	-	1	-	1
"	78	Whitworth	Ferry Hill -	R. S. Johnson & Co. -	James Freeman -	Putter -	16	Fall of stone -	-	1	-	-	-	1
"	79	Silksworth	Sunderland -	Earl Vane -	Thomas Storey -	Sinker -	31	Fell off a cradle in sinking shaft	-	-	1	-	-	1
"	80	Auckland Park	Bishop Auckland	Black Boy Coal Co. -	James Calligan -	Brakesman	23	Crushed by tubs -	-	-	-	1	-	1
Total									27	30	6	34	14	111

Mr. Dickinson's Report.

REPORT ON THE INSPECTION OF MINES IN THE NORTH AND EAST LANCASHIRE OR MANCHESTER DISTRICT FOR THE YEAR ENDED 31st DECEMBER 1871.—By JOSEPH DICKINSON, Esq., F.G.S.

SIR,

Manchester, 29th February 1872.

The fatal accidents.

I HAVE the honour to report to you that during the year 1871 the number of fatal Colliery accidents which have taken place in the North and East Lancashire or Manchester district amount to 61, and the deaths therefrom to the same number, each accident having been attended with only one death. They consist of—

- 3 by explosions of firedamp.
- 37 „ falls of roof and coal.
- 14 „ shaft accidents.
- 5 „ miscellaneous accidents underground.
- 2 „ „ „ „ above ground.

As compared with the preceding year's total, there is in this year a diminution of five accidents and 25 deaths.

The fatal explosions.

The three explosions of firedamp occurred respectively on the 11th of March at Jubilee Colliery, near Oldham; on the 13th October at Ladyshore Colliery, Little Lever; and on the 21st December at Hollingworth Colliery, near Littleborough.

At Jubilee Colliery the gas fired at the deceased's candle as he was pushing a waggon past the entrance to a suspended and fenced off working. The underlooker was aware that gas was there, but he under-rated the danger, and did not order safety lamps in the parts liable to be effected, as required by the special rules.

At Ladyshore Colliery, the deceased, a miner, was working with a candle, when, as appeared, a fall of roof in the air-way having interrupted the air current, a little gas accumulated in his place and it lighted as he lifted his candle to see if the coal was safe. It was in the Doe Mine, which is here about $7\frac{1}{2}$ feet in thickness, and so steep that the miners, although knowing the risk of gas accumulating, yet consider it safer on the average to work by a candle and have a good light for guarding against coal falling, rather than have a safety lamp with poor light to guard against the less evident danger of firedamp.

At Hollingworth Colliery safety lamps were ordered to be used in cutting through a small fault that was giving off gas, and it was expected that the miner on the second shift would use the same lamp, but instead of doing so, he, after talking with the first miner as to the state of the place, went in with a candle, and as more gas was being given off than he expected it lighted, and he was burned so that he died 13 days afterwards.

The fatal falls of roof and coal.

The 37 falls of roof and coal occurred as follows :—

Five at the Clifton and Kersley Company's Collieries, two being at the Spindlepoint, one at Manor, one at Robin Hood, and one at Wetearth Colliery.

Two at the Bridgewater Collieries, one being at Ashton Field, and one at Watergate Colliery.

Two at the Stand Lane Company's Stand Lane Colliery.

Two at the Fairbottom Company's Collieries, one being at Rocher and the other at Woodpark Colliery.

Two at the Bent's Colliery, Little Lever.

Two „ Bradford Colliery, Manchester.

Two „ Atherton Collieries, one being at the Howe Bridge Six Feet, and the other at the Lovers' Lane Five Feet Colliery.

Two at the Lever Collieries, one being at Farnworth Bridge, and the other at Fearnysides Colliery.

And one at each of the 18 following Collieries :—

Lowside, Oldham.
Great Lever, Bolton.
Tooter Hill, Bacup.
Broughton, Burnley.
Black Lane, Radcliffe.
Nos. 1 and 2 Pits, Westleigh.
Smithfold, Little Hulton.
Astley and Tyldesley, Tyldesley.
Hulton Park, Hulton.
Cat Hall, Baxenden.
Blainscough Hall, Coppull.
Denton, Denton, Manchester.
Dunkenhalgh Park, Church.
Heyfield, Westleigh.
Robin Hill, Oldham.
Denton Lane, Chadderton.
Lee, Stacksteads; and
Outwood, Pilkington, near Manchester.

The 14 shaft accidents occurred under the following heads :—

Two by overwinding.

Six whilst ascending and descending.

Four by falling from part way down; and

Two by things falling from part way down.

The fatal
shaft acci-
dents.

The two by overwinding were respectively at the Brinsop Hall, No. 4 pit, Westhoughton, and at the Woodpark, Bardsley. At Brinsop Hall the engineer started the engine the wrong way, and drawing the cage over the pulley it fell upon a miner who was on the bank. At Woodpark the engineer having stopped the cage at the landing plate to let a person out of the top deck, was raising it to let four persons out from the lower deck, when, the handles of the engine not being conveniently placed and the steam break sticking, the cage was jerked into the top of the engine house, where it stuck on the beams. Two of the persons were not much injured, one had his arm broken, and the other was thrown out upon the winding drums and killed. The engineer, it appeared, was an experienced person, but had only been a few days at this engine.

The six whilst ascending and descending were respectively :—

At Ashton's Field Pit, Little Hulton, to a boy aged 16 years, who fell out of a cage (5 ft. 9 in. by 3 ft. 9 in.) whilst ascending with five other persons.

At Clamerclough, Kearsley, to a miner who fell out, or was thrown out by the tub catching when descending alone, there being no conductors in the shaft.

At New Lester, Tyldesley, to a boy aged 13 years, who, having just come up with some other persons, was caught by the cage being lowered as he was stepping off, the engineer having, as it appeared, mistaken the lifting of the banksman's hand to receive a safety lamp as the signal to go on.

At the Doe Pit, Kearsley (Mr. Scowcroft's), to a youth who, apparently thinking he had reached the bottom, was caught against the lowest bearer on putting his head out in descending.

At Hicbiby, Coppull, to a boy aged 13, who, apparently expecting the cage would be stopped when the top deck was lowered to the landing plate, was crushed in attempting to get in as it passed; and

At the Hartford Pit, Oldham, to a miner who was thrown out of the cage which, swinging with wire rope conductors, caught under a bearer as he and three other persons were ascending from a mouthing.

The four by falling from part way down occurred respectively :—

At Hoddlesden, No. 3 Pit, to the banksman who fell away when examining the pumps.

At Robin Hood, Clifton, to a pony driver aged 13, who, for a freak, laid hold of the cage, intending to drop off when it got a little way up, but was taken too high and fell about 13 yards.

At Horrocks cote trial pit, Edgeworth, to a sinker, who was precipitated down the shaft with another person by a bearer either breaking or slipping out at one end; and

At Outwood Colliery, Pilkington, to an assistant hooker-on, who fell out of a mouthing in the shaft.

The two struck by things falling from part way down, were one at the Habergham new winning, Burnley, by a stone from the side of a sinking shaft falling upon him soon after a shot had been fired; and the other at Black Lane Pit, Radcliffe, to a hooker-on, who was struck at his work by one of the guide irons of the ascending cage, which caught and was knocked off as it entered the wooden steadying rods at the upper part of the wire rope conductors.

The fatal miscellaneous accidents underground.

The five miscellaneous accidents underground, were one on an inclined plane, at Ringley Fold, by a link in a coupling chain opening at the weld and letting a train on a brow run back into a shunt. Three by trams and tubs; one being at Mesne Lea Colliery to a pony driver who was run over by tubs from which he apparently fell as he was riding, one at Outwood, to a hooker-on, who was caught between two tubs by the engineer drawing the train too far up the brow; and one at Bradford, Manchester, to a waggoner aged 16 years who was overpowered in turning his tub on the plates in a brow; and one by machinery, at Raikes Colliery, to a person who was struck by the handle of an incline break which jerked out of his hand by the break slipping.

The fatal miscellaneous accidents on the surface.

The two miscellaneous accidents on the surface, were one at Scot Lane Colliery, Blackrod, to a youth acting as stoker, who slipped in stepping on to the colliery locomotive engine; and the other at No. 13 three quarters pit siding, Hulton, to the waggonman, who slipped and got caught between two railway waggons as he was putting on the break.

The non-fatal accidents,

The non-fatal accidents reported comprise about the usual proportion. Those by explosions, which have all to be reported whether slight or serious, amount to 19 by firedamp with injury to 26 persons; and four by powder with injury to six persons. None from any steam boiler.

Firedamp.

In eighteen of the non-fatal firedamp explosions it was ascertained that the gas ignited at open lights, but in the other (where a man went into the goaf) information was withheld. Nine of the occurrences were flashes of gas either at faults or in the cutting at the face of work. Two were by gas being suddenly liberated out of the strata as roof fell. One, of a like kind, but where the gas was liberated from above the backing when an arch fell. Two at small accumulations on men returning after an intermission of working. One by taking a candle too near when examining with the safety lamp. One on putting a candle to a hole in the roof. One by putting a candle at the end of an arch where the backing was slipping down. One by climbing into the goaf. And one upon cutting through into an old level.

The dates upon which these nineteen non-fatal explosions of firedamp happened were, January 25th; February 7th, 21st, 27th; March?; April 29; May 4th, 12th, 12th; June 6th; July 27th; August 9th, 10th; September 21st, 26th; October 9th, 27th; December 20th, 26th.

Powder.

The four non-fatal explosions of powder were, first, to two miners who got burnt nine yards off by the flame of a shot that blew out the stemming; second, to a miner who fired the powder in his flask; third, to a boy in flashing off powder which he had taken out of a miner's flask to play with; and fourth, to two miners by their shot going off on being stemmed with an iron stemmer, which they were using because two copper stemmers they had with them were too large for the hole.

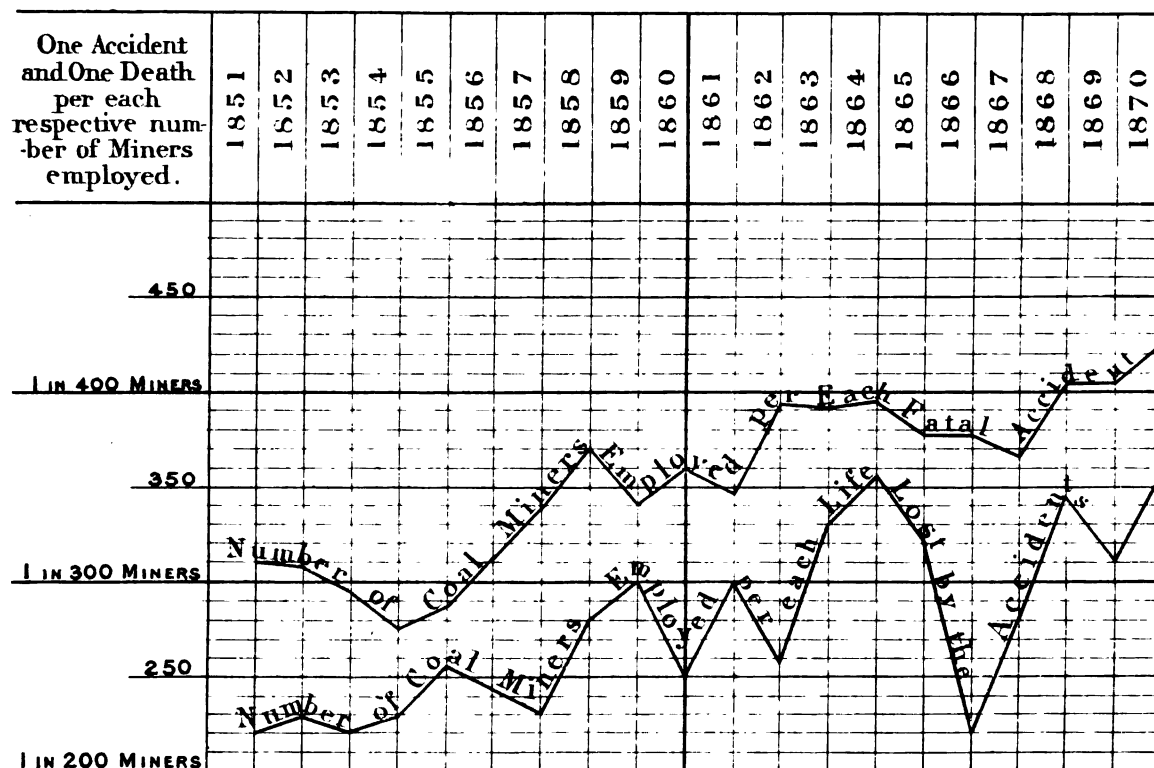
Working of the Act.

I have as usual attended such of the Inquests and investigated such of the fatal and non-fatal accidents as appeared to require my attention, with the view of ascertaining whether the regulations were being attended to and precautions taken to prevent repetitions. I have also as usual attended wherever there has been reason to suspect removeable danger, or when it has been reported; and have generally seen all new winnings fairly started. I find there is evidently a general desire to give effect to the spirit as well as the letter of the law.

The exceptions where, according to my general instructions, I have considered it requisite to vindicate the law by proceeding for penalties were, at Royton, in the case of the explosion in the Jubilee Colliery, when the underlooker was fined 1*l*. for not ordering safety lamps; and at Over Darwen, where an owner was fined in like amount for neglecting to have his abandoned pits fenced. These fines have been paid to the Magistrates' clerks, to be paid over to the Consolidated Fund, as directed by the Act.

During the time that the Regulations have been in operation a large increase has taken place in the number of Coal Miners employed in this district. According to the census they were in 1851, 18,249, and in 1861, 23,525. This year (1871) according to the numbers furnished, with only two exceptions, from the Collieries, they are 26,110; but such has been the satisfactory working of the Act that instead of the increased numbers being accompanied by a proportionate increase in the number of lives lost, there has been an actual diminution. The result, I consider, shows indisputably that the principle upon which the Acts have been based and carried out is sound.

DIAGRAM. shewing the Number of Coal Miners employed per each Fatal Accident, and per each Life Lost, in each year since the commencement of the Inspection of Coal Mines in England and Scotland.



The Year 1866 was an exceptional year. Wages were then very high, and in the Oaks Colliery at Barnsley alone 361 lives were lost.

It is now known that in the year 1851 all the fatal accidents and deaths were not reported

J. D.

North and East Lancashire or Manchester District.

Year.	1852.	1853.	1854.	1855.	1856.	1857.	1858.	1859.	1860.	1861.
Separate Accidents - -	60	60	73	78	78	52	60	55	55	67
Deaths - - -	113	82	87	89	84	99	138	68	58	82

Year.	10 Years Average.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	10 Years Average.
Separate Accidents - -	63·3	56	60	60	61	55 3						
		Transferred portion				58	71	61	74	66	61	62·8
Deaths - - -	90·0	59	68	64	66	66 3						
		Transferred portion				69	84	65	76	86	61	69·8

The number of fatal accidents and deaths in all the districts since the commencement of the inspection being only to be met with in a variety of forms scattered through numerous blue books, some of which are out of print, it may, therefore, be useful to insert here the statistics which I recently prepared for your information, as to the actual results of the working of the Acts.

The diagram shows at a glance that amid various fluctuations gradual improvement has been going on. The table is an uninviting looking mass of figures, but if closely examined it shows that, although there is an increase in the number of casualties, yet in proportion to the number of persons employed there is a large diminution. For instance, at the commencement there was per annum 1 separate fatal accident for every 310 persons employed, and 1 death for every 219 persons. In the 10 years ending 1860 the average annual number of accidents diminished to 1 in 318 persons, and the deaths to 1 in 245 persons. These figures being based upon the census returns and the ascertained number of casualties admit of no doubt.

The census returns showing the numbers employed in the respective occupations are not yet published for 1871. The numbers, therefore, between 1860 and 1870 are based upon the computation made by each Inspector for his own district. Upon this basis, and taking, as before, the actual number of fatal accidents and deaths therefrom in the 10 years ending 1870, the accidents are still further diminished to one in 388, and the deaths to one in 300 persons employed.

The chief diminution has been effected in explosions of firedamp and shaft accidents, which the management has most control over. The diminution is also large in falls of roof and coal wherein the miners have especially to take care of themselves.

In miscellaneous accidents alone there is an increase. This arises chiefly from two causes, namely, by tub-waggons or trams and blasting below ground, and from railway waggons in sidings and machinery on the surface. The increase below ground by tubs or trams and by blasting is accountable for, first, by the transition that has been taking place from sledges without wheels to tubs with wheels, making the work much easier but more dangerous, especially in steep mines; and, second, by the extraordinary extent that miners to save labour now use powder instead of undermining and cutting the sides with the pick as formerly, when the coal was forced down with wedges. The increase on the surface is notably from the great extension of railways to collieries which previously had only landsale or canal communication, and from the increased application of machinery for screening the coal and moving the tubs.

The increase, however, under the whole of the miscellaneous heads is but a slight drawback in the general improvement. Indeed the miscellaneous increase is far more than balanced by the saving in shaft accidents alone.

The Inspectors who have been appointed under the Acts 13 and 14 Vict. c. 100, 18 and 19 Vict. c. 108, and 23 and 24 Vict. c. 151, are,—

- | | | | |
|------|---|---|--|
| 1850 | { | Blackwell, resigned, died.
Dickinson, No. 1.
Dunn, superannuated, died.
Morton, superannuated. | |
| 1851 | | Mackworth, succeeded Blackwell, died. | |
| 1852 | { | Lancaster, resigned, died.
Wynne, No. 2. | } The four districts increased to six. |
| 1853 | | Williams, succeeded Lancaster, died. | |
| 1855 | { | Brough, No. 3.
Higson, No. 4.
Alexander, No. 5.
Atkinson, died.
Hedley, resigned, died.
Evans, No. 6 | } The 6 districts increased to 12. |
| 1858 | | Longridge, succeeded Mackworth, died. | |
| 1860 | | Baker, No. 7, succeeded Longridge. | |
| 1863 | | Moore, No. 8, succeeded Williams. | |
| 1864 | | Wales, No. 9, succeeded Hedley, district changed. | |
| 1866 | | Verner, succeeded Dunn, died. | |
| 1867 | | Southern, No. 10, succeeded Morton, district since changed. | |
| 1867 | | Wardell, No. 11, succeeded Verner, district changed. | |
| 1870 | | Willis, No. 12, succeeded Atkinson. | |

Those with the numbers attached being the present Inspectors.

Surplus
Hartley fund.

In the year 1864 more money than was needed having been subscribed for the relief of the relations and dependants of the sufferers in the accident at the Hartley Colliery in Northumberland, the surplus was divided with a view to affording relief in the other districts. I undertook to act as honorary secretary for this district, and at my request a large number of Colliery owners and others became a committee; and the Right Hon. the Earl of Wilton, Sir James P. Kay-Shuttleworth, Bart., and Mr. Oliver Heywood, of this county, undertook to act as trustees. On the 21st May 1864 the sum of 1,587*l.* 12*s.* 11*d.* was paid into the Manchester branch of the National Provincial Bank of England in the names of these trustees for the North and East Lancashire District Mining Fund. I have each half-year had the interest added; nothing has been drawn out, and the account on December 30th, 1871, amounts to 1,932*l.* 19*s.* A movement is being made to establish a general institution to meet Colliery accidents in Lancashire, which, if it succeeds, will be entitled to the whole or part of this amount. Should it not succeed, some provision will have to be made by the trustees for investing the money, and for appointing successors; and, possibly, in order to keep knowledge of the fund alive, it may be desirable to divide the interest annually amongst the principal sufferers by the Colliery accidents and the infirmaries where persons so injured are sent for treatment.

I enclose the list, summary, and return of accidents for the year, and have the honour to be,

Sir,

Your very obedient servant,

(Signed)

JOSEPH DICKINSON,

Inspector of Coal Mines.

The Right Hon. Henry Austin Bruce, M.P.,
Principal Secretary of State,
Whitehall.

TABLE showing the Number of SEPARATE FATAL ACCIDENTS, together with the Number of Coal Miners employed per each Accident, in each Year since the commencement of the Inspection of Coal Mines.

Accidents causing one or more Deaths.										Persons employed per separate Fatal Accident.				
YEAR.						Total Persons employed in and about the Collieries.								
	Fire-damp Explosion.	Roof and Coal falling.	Shaft.	Miscellaneous Under-ground.	Miscellaneous Sur-face.	Total.	Per Census.	Computed.	Fire-damp Explosion.	Roof and Coal falling.	Shaft.	Miscellaneous Under-ground.	Miscellaneous Sur-face.	Total.
1851	98	307	187	68	38	698	216,217	216,217	2,206	704	1,156	3,183	5,690	310
1852	91	333	175	79	43	721	222,843	222,843	2,449	669	1,273	2,820	5,182	309
1853	89	354	206	86	42	777	229,468	229,468	2,578	648	1,114	2,668	5,463	295
1854	87	370	253	94	57	861	236,094	236,094	2,714	684	933	2,511	4,142	274
1855	99	388	203	114	43	847	242,719	242,719	2,452	625	1,195	2,129	5,644	286
1856	72	388	189	94	58	801	249,345	249,345	3,463	642	1,319	2,652	4,299	311
1857	74	360	157	120	49	760	255,971	255,971	3,459	711	1,630	2,134	5,224	337
1858	70	348	145	111	36	710	262,596	262,596	3,751	754	1,811	2,366	7,294	370
1859	70	384	165	122	54	795	269,222	269,222	3,846	701	1,631	2,207	4,985	338
1860	70	379	157	115	48	769	275,847	275,847	3,940	728	1,757	2,398	5,747	359
10 years	820	3,611	1,837	1,003	468	7,739	2,460,322	2,460,322	3,000	681	1,339	2,453	5,257	318
1861	61	413	148	123	66	811	282,473	282,473	4,630	684	1,908	2,296	4,280	348
1862	55	402	109	121	51	738	291,003	291,003	5,291	724	2,669	2,405	5,706	394
1863	51	398	126	126	56	757	299,000	299,000	5,862	751	2,373	2,373	5,339	393
1864	59	380	158	117	63	777	307,542	307,542	5,213	809	1,946	2,628	4,881	396
1865	64	368	144	169	92	837	315,451	315,451	4,929	857	2,190	1,866	3,429	377
1866	71	345	153	187	101	857	320,663	320,663	4,516	929	2,096	1,715	3,175	374
1867	56	440	132	197	82	907	333,116	333,116	5,948	757	2,523	1,691	4,062	367
1868	44	432	122	188	74	860	346,820	346,820	7,882	803	2,843	1,845	4,687	403
1869	48	451	123	159	73	854	345,446	345,446	7,197	766	2,808	2,172	4,732	404
1870	56	402	118	174	80	830	350,394	350,394	6,266	873	2,974	2,017	4,386	423
10 years	565	4,031	1,333	1,561	738	8,228	3,192,405	3,192,405	5,650	792	2,394	2,045	4,326	388
20 years	1,385	7,642	3,170	2,564	1,206	15,967	5,652,727	5,652,727	4,081	739	1,783	2,204	4,686	354

NOTE.—It is now known that in the year 1861 all the fatal accidents and deaths were not reported.

REPORTS OF INSPECTORS OF MINES.

TABLE showing the Number of DEATHS by the Accidents, together with the Number of Coal Miners employed per each Death, in each Year since the commencement of the Inspection of Coal Mines.

Deaths caused by the Accidents.							Persons employed per Life Lost.								
YEAR.	Total Persons employed in and about the Collieries.						Persons employed per Life Lost.								
	Firedamp Explosion.	Roof and Coal falling.	Shaft.	Miscellaneous Under-ground.	Miscellaneous Shaft.	Total.	Per Census.	Computed.	Firedamp Explosion.	Roof and Coal falling.	Shaft.	Miscellaneous Under-ground.	Miscellaneous Surface.	Total.	
1851	-	321	327	219	73	44	984	216,217	216,217	673	661	987	2,961	4,914	219
1852	-	264	349	209	116	48	986	222,843	222,843	844	638	1,066	1,921	4,642	226
1853	-	214	370	236	94	43	957	229,468	229,468	1,072	620	972	2,441	5,336	219
1854	-	210	389	290	99	57	1,045	236,094	236,094	1,124	606	814	2,394	4,142	225
1855	-	146	407	229	127	46	955	242,719	242,719	1,662	596	1,059	1,911	5,276	254
1856	-	236	400	216	114	61	1,027	249,345	249,345	1,056	623	1,154	2,187	4,087	242
1857	-	377	372	175	141	54	1,119	255,971	255,971	678	688	1,462	1,815	4,740	228
1858	-	215	366	172	140	38	931	262,596	262,596	1,221	717	1,526	1,875	6,910	282
1859	-	95	399	191	160	60	905	269,222	269,222	2,833	674	1,409	1,682	4,487	297
1860	-	363	388	182	122	54	1,109	275,847	275,847	759	710	1,515	2,261	5,108	248
10 years	-	2,441	3,767	2,119	1,186	505	10,018	2,460,322	2,460,322	1,008	653	1,161	2,074	4,872	245
1861	-	119	427	164	163	70	943	282,473	282,473	2,374	661	1,722	1,733	4,035	300
1862	-	190	422	137	332	52	1,133	291,000	291,000	1,532	689	2,124	876	5,596	257
1863	-	163	407	147	184	56	907	299,000	299,000	1,834	734	2,034	2,231	5,389	330
1864	-	94	395	184	125	69	867	307,542	307,542	3,271	778	1,671	2,460	4,457	355
1865	-	168	381	163	179	93	984	315,451	315,451	1,877	828	1,935	1,762	3,392	320
1866	-	651	361	162	203	107	1,484	320,663	320,663	492	888	1,980	1,580	2,997	216
1867	-	286	449	158	211	86	1,190	333,116	333,116	1,165	742	2,108	1,579	3,873	280
1868	-	154	444	132	204	77	1,011	346,820	346,820	2,252	781	2,627	1,700	4,504	343
1869	-	257	466	129	179	85	1,116	345,446	345,446	1,344	741	2,678	1,930	4,064	310
1870	-	185	411	129	186	80	991	350,894	350,894	1,897	854	2,720	1,886	4,386	354
10 years	-	2,267	4,163	1,505	1,916	775	10,626	3,192,405	3,192,405	1,408	767	2,121	1,666	4,119	300
20 years	-	4,708	7,930	3,624	3,102	1,280	20,644	5,652,727	5,652,727	1,200	713	1,560	1,822	4,416	274

In the year 1866, in the Oaks Colliery at Barnsley, 361 lives were lost.

LIST of the OWNERS and COLLIERIES in the MANCHESTER DISTRICT of LANCASHIRE, specifying those where FATAL ACCIDENTS have taken place, in the Year 1871.

Owners.	Address.	Number.	Collieries.	Where situated.	Fatal Accidents.	Lives lost.
Altham Co. - -	{ John J. Rippon, Altham, Accrington	{ 1 2	Altham - - Whinney Hill -	Altham. Ditto.		
Arley Main Co. - -	Blackrod, Chorley -	3	Park Hall - -	Blackrod.		
Edward Ashworth and Co. -	Cowpe, Waterfoot, Manchester.	4	Brandwood Moor -	Brandwood Moor.		
Ralph Ashworth and Co. -	Littleborough -	5	Starring - -	Littleborough.		
Astley and Tyldesley Coal and Salt Co. (Limited).	Tyldesley, Manches- ter.	{ 6 7 8	Cross Hillock - Nook - - Tyldesley - -	Astley. Tyldesley. Ditto -	1	1
Bank - - -	Little Hulton, Bolton	9	Bank - - -	Little Hulton.		
Bankhouse Co. - -	Bagslate, Rochdale -	10	Bankhouse - -	Bagslate.		
Bardsley Co. - -	Ashton-under-Lyne -	11	Bardsley - -	Bardsley.		
James Barker - -	Charnock Richard, Chorley.	12	Pemberton House -	Charnock Richard		
Trustees of Joseph Barnes -	Church, Accrington	13	Dunkenhalgh Park	Church - -	1	1
Matthew Bennett and Brothers.	Little Hulton, Bolton	14	Street Gate - -	Little Hulton.		
William Berry - -	Bagslate Moor, Roch- dale.	15	Bagslate Moor -	Bagslate.		
Reps. of John G. Blackburne	Oldham - - -	16	Lowside - - -	Oldham - -	1	1
Booth and Marland - -	Ditto - - -	17	Honeywell Lane -	Ditto.		
		18	Great Lever - -	Great Lever -	1	1
The Earl of Bradford - -	{ Great Lever Col- lieries, Bolton.	{ 19 20 21	Great Lever Works Hacken - - - Raikes - - -	Ditto. Darcy Lever. Great Lever -	1	1
Bradford Co. - - -	Bradford, Manchester	22	Bradford - - -	Manchester -	3	3
James Brearley and Son -	Brandwood Moor, Waterfoot.	23	Brandwood Moor -	Brandwood Moor.		
Breightmet Co. - - -	Breightmet, Bolton -	24	Breightmet - -	Breightmet.		
		25	Ashtonsfield -	Little Hulton -	2	2
		26	Barracks - - -	Ditto.		
		27	Bridgewater - -	Worsley.		
		28	Buckley Lane -	Little Hulton.		
		29	Burgess Land -	Ditto.		
		30	Delph - - -	Middle Hulton.		
		31	Edge Fold - -	Worsley.		
		32	Ellenbrook - -	Tyldesley.		
		33	Gatley - - -	Ditto.		
		34	Howarths Field -	Farnworth.		
Bridgewater Trustees -	Colliery Offices, Walkden, Bolton.	{ 35 36 37 38 39 40 41 42 43	Linnyslaw - - Lords Moss Field - Madams Wood - Mangnalls - - Mosley Common - Sanderson - - Saplingfield - - Tonges Field - - Wardley Coppice Field.	Worsley. Farnworth. Little Hulton. Worsley. Tyldesley. Worsley. Middle Hulton. Farnworth. Worsley.		
		44	Watergate - -	Middle Hulton	1	1
James Brierley & Co. -	Milkstone Head, Roch- dale.	45	Syke Lane - - -	Hollingworth.		
Brinsop Hall Co. - - -	Westhoughton, Bolton	46	Brinsop Hall - -	Westhoughton -	1	1
		47	Cupola - - -	Hameldon.		
Brooks and Pickup - - -	Towneley, Burnley {	48 49	Towneley - - - Wholaw Nook -	Burnley. Wholaw.		
Orlando Brothers - - -	Livesey, Blackburn -	50	Livesey Fireclay Works.	Livesey.		
Adam Bullough - - -	Waterside, Darwen -	51	Waterside - -	Eccleshill.		
Butterworth and Brooks -	Sunnyside, Rawten- stall.	52	Cragg - - -	Bacup.		
Edmund Butterworth and Sons.	Crompton, Oldham -	53	Crow Knowl - -	Crompton.		
The Exors. of James Butterworth.	Bacup - - -	54	Oaken Clough -	Bacup.		
James Butterworth and Son.	Greenbooth, Rochdale	55	Knowl - - -	Wolstenholme.		

REPORTS OF INSPECTORS OF MINES.

List of the Owners and Collieries, &c. in the Manchester District—*continued.*

Owners.	Address.	Number.	Collieries.	Where situated.	Fatal Accidents.	Lives lost.
Chamber Company -	Hollinwood -	56 57 58	Oak - Chamber - Denton Lane and Ferney Field.	Hollinwood. Oldham. Chadderton -	1	1
Francis Charlton -	Little Hulton, Bolton	59 60 61 62	Stockfield - Wharton - Botany Bay - Bus -	Ditto. Little Hulton. Clifton. Ditto.		
Clifton and Kersley Co. -	Clifton, Manchester	63 64 65 66	Robin Hood - Manor - Spindlepoint - Wetearth -	Ditto - Kearsley - Ditto - Clifton.	2 1 2 1	2 1 2 1
Cliviger Co. -	Cliviger, Burnley -	67 68	Coppy - Union -	Cliviger. Ditto.		
James Collinge and Co. -	Oldham -	69	Glodwick -	Oldham.		
John Crankshaw -	Horwich, Bolton -	70	Winter Hill -	Horwich.		
Charles Crossley -	Wardle, Rochdale -	71	Crook Bank -	Wardle.		
Darcy Lever Co. -	Darcy Lever, Bolton	72	Darcy Lever -	Darcy Lever.		
James Darlington -	Blainscough Hall Colliery, Coppull, Chorley.	73 74 75 76 77 78	Blainscough Hall Springfield - Welch Whittle - Cartridge Nook - Land - South Grain -	Coppull - Ditto. Welch Whittle. Wardle. Shawforth. Dulesgate.	1	1
James Dearden -	The Orchard, Roch- dale.	79 80 81 82	Toadleach - Todmorden Moor - Tooter Hill - Wallnook -	Healey. Dulesgate. Bacup - Wardle.	1	1
Dewhurst, Hoyle, and Smethurst.	Anderton Hall Col- liery, Blackrod, Chorley.	83 84	Anderton Hall - Snydale Hall -	Blackrod. Westhoughton.		
James Diggle -	Westleigh and Hey- field Collieries, Leigh, Manchester.	85 86 87 88	Heyfield - Lower Hall - Owens - Westleigh -	Westleigh - Ditto. Ditto. Ditto.	1	1
Exors. of Lawrence Duck- worth.	Sheep Hey, Rams- bottom.	89 90	Scout Moor - Shipperbottom -	Shuttleworth. Walmersley.		
Eccleshill Coal and Coke Co.	Over Darwen -	91	Flash -	Eccleshill.		
Ralph Entwisle -	Over Darwen -	92 93	Cranberry Moss - Over Darwen Brickworks.	Entwistle. Over Darwen.		
Fairbottom Co. -	Fairbottom Collier- ies, Ashton-under- Lyne.	94 95 96 97 98	Broad Oak and Moss Dock - Hartshead - Nelson and Rocher Woodpark -	Broad Oak. Fairbottom. Hartshead. Park - Bardsley -	1 2	1 2
Nicholas Fish -	Rivington, Bolton -	99	Wilders Moor -	Rivington.		
H. H. Fishwick and Co. -	Rochdale -	100	Brotherod -	Rochdale.		
James Fletcher and Brothers	Littleborough -	101	Higher Shore -	Littleborough.		
John Fletcher -	Little Lever, Bolton	102	Ladyshore -	Little Lever -	1	1
John Fletcher and others -	Atherton Colliery, near Manchester.	103 104 105 106	Chanters - Gibfield - Howbridge - Stopes -	Atherton. Ditto. Ditto Little Lever.	2 2	2 2
Thos. Fletcher -	Bradley Fold Collieries, Little Lever, Bolton.	107 108 109 110	Bents - Black Moss - Brightmet - Radcliffe Moor -	Ditto - Radcliffe. Brightmet. Ainsworth.	2	2
Ditto -	Great Boys Colliery, Tyldesley.	111	Great Boys -	Tyldesley.		
Thos. Fletcher and Sons	Near Manchester -	112	Outwood -	Outwood -	3	3
Foreman and Jolley -	Arley, Blackrod -	113	Arley, New -	Blackrod.		
John Gerrard and Son	Farnworth, Bolton -	114	Clamerclough Pot- tery.	Farnworth -	1	1
John Gibson and Co. -	Little Hulton, Bolton	115	Smithfold -	Little Hulton -	1	1
Great Harwood Co. -	Near Accrington -	116 117	Great Harwood - Martholm -	Great Harwood. Ditto.		
Reuben Haigh and Co. -	Walsden, Todmorden	118	Foulclough -	Todmorden.		
Hall and Rogers -	Smithy Bridge, Roch- dale.	119	Cleggswood Pottery	Littleborough.		

List of the Owners and Collieries, &c. in the Manchester District—continued.

Owners.	Address.	Number.	Collieries.	Where situated.	Fatal Accidents.	Lives lost.
James Hardcastle -	Firwood, Bolton -	120	Bradshaw and Harwood.	Harwood.		
Exors. of James Hardman -	Stacksteads -	121	Wellclough -	Stacksteads.		
George Hargreaves and Co. {	Baxenden Colliery, near Manchester -	122	Cat Hall -	Broad Oak -	1	1
		123	Hole in Band -	Accrington.		
		124	Railway and Victoria	Baxenden.		
		125	Wood Nook -	Accrington.		
		126	Brex -	Lower Whitwell Bottom.		
		127	Dean -	Water.		
Ditto -	Rossendale Collieries, Newchurch, near Manchester -	128	Foxhill -	Middle Whitwell Bottom.		
		129	Grime Bridge -	Ditto.		
		130	Scar End -	Ditto.		
		131	Meadows -	Bacup.		
		132	Old Clough -	Ditto.		
		133	Swinshaw -	Crawshaw Booth		
Exors. of John Hargreaves {	Burnley, &c. Collieries, Burnley	134	Stacksteads -	Stacksteads.		
		135	Bank Hall -	Burnley.		
		136	Broughton -	Ightenhill Park	1	1
		137	Burnt Hills -	Wholaw Nook.		
		138	Cornfield -	Ightenhill Park.		
		139	Foxclough -	Colne.		
		140	Gannow -	Habergham.		
		141	Habergham -	Ditto -	1	1
		142	Hapton Valley -	Hapton.		
		143	Marsden -	Marsden.		
		144	Padiham -	Padiham.		
		145	Rowley -	Burnley.		
Haugh Hey Co. -	Rochdale -	146	Whittlefield -	Ditto.		
		147	Haugh Hey -	Haugh Hey.		
		148	Cheesden Bar -	Bury.		
		149	Heskin -	Heskin.		
John Haworth -	Bury -	148	Nuttwood -	Rochdale.		
Heakin Hall Co. -	Heskin, Chorley -	149				
Samuel Heywood -	Moss Cottage, Hey- wood.	150				
Abraham Hill -	Whitworth, Rochdale	151	Rock View -	Whitworth.		
Peter R. Hoare -	Julius Bailey, New- ton-le-Willows.	152	Horrocks Cote -	Edgeworth -	1	1
Zech. and James Howarth -	Rochdale -	153	Woodhouse Lane -	Woodhouse Lane		
Wm. Ford Hulton -	Bolton -	154	Hulton and	Hulton -	1	1
		155	Hulton Park -	Ditto -	1	1
Andrew Knowles & Sons {	Pendlebury, Man- chester.	156	Agecroft -	Pendlebury.		
		157	Clifton Hall -	Clifton.		
		158	Clifton Moss -	Ditto.		
		159	Pendlebury -	Pendlebury.		
		160	Pendleton -	Pendleton.		
		161	Farnworth Bridge	Little Lever -	1	1
Ditto -	Little Lever, Bolton	162	Fearneside -	Ditto -	1	1
		163	Foggs -	Darcy Lever.		
		164	Rivin, New -	Little Lever.		
		165	Radcliffe -	Radcliffe.		
Knowles and Hall -	Radcliffe Colliery, near Manchester.	166	Bank Top -	Ditto.		
		167	Little Hey -	Stoneclough.		
Knowles and Stott -	Stoneclough, Kears- ley, Manchester.	168	Ringleyfold -	Ringley -	1	1
		169	Singingclough -	Kearsley.		
Executors of James I. Law -	Bacup -	170	Greave New -	Bacup.		
James Leach -	Kitcliffe, Rochdale	171	Elpit Edge -	Butterworth.		
Thomas Leach -	Stacksteads -	172	Lee -	Bacup -	1	1
Samuel Leather -	Blackrod, Chorley	173	Dootson Vauze -	Blackrod.		
Benjamin and Joseph Lees -	Britannia, Bacup -	174	Freeholds -	Facit.		
		175	New Line -	Bacup.		
Lees and Ashworth -	Hollingworth, Little- borough.	176	Syke -	Hollingworth.		
Leeses Jones, and Co. -	Ditto -	177	Holebottom -	Ditto.		
		178	Rhodes Bank -	Ditto.		
Lees and Mayall -	Greenacres Moor, Oldham.	179	Count Hill -	Higher Barrow- shaw.		
Lees and Tetlow -	Littleborough -	180	Light Owlers -	Littleborough.		
Leigh and Bradbury -	Denton, Manchester	181	Broomstair -	Denton.		
Ditto -	Clayton, Manchester	182	Clayton -	Clayton.		
Limehurst Company -	Ashton-under-Lyne -	183	Limehurst -	Ashton-under- Lyne.		

List of the Owners and Collieries, &c. in the Manchester District—continued.

Owners.	Address.	Number.	Collieries.	Where situated.	Fatal Accidents.	Lives lost.
Littlewood and Heap	Smith Street, Rochdale	184	Clough - -	Littleborough.		
Lomax and Co. -	Rochdale - -	185	Smallbridge -	Smallbridge.		
John Lomax and Co. -	Ditto - -	186	Old Sink and Greenland.	Rowley Moor.		
John Lord - -	Bacup - -	187	Deansgreave -	Bacup.		
Samuel Lord - -	Wolstenholme, Roch- dale.	188	Barnford Closes -	Wolstenholme.		
Lords Fields Co. -	Ashton-under-Lyne -	189	Lords Fields -	Ashton-under- Lyne.		
Mrs. Ann Maden - -	Bacup - -	190	Hogshead - -	Bacup.		
Messrs. Marland - -	Hollinwood, Man- chester.	191	Bower - -	Hollinwood.		
George Maxwell - -	Bacup - -	192	Ball - -	Bacup.		
Mayall and Seddon - -	Oldham - -	193	Change - -			
Meadow Head Co. - -	Rochdale - -	194	Lower Moor -	Oldham.		
Melling Brothers - -	Leigh, Manchester -	195	Meadow Head -	Wolstenholme.		
George Mellodew - -	Oldham - -	196	Snapes - -	Westleigh.		
Thomas Mellodew and Co. -	Moorside, Oldham -	197	Hodgeclough -	Oldham.		
E. D. Milnes and Brother -	Birtle, Bury - -	198	Sunfield - -	Moorside.		
Moscrop Brothers - -	Wolstenholme, Roch- dale.	199	Lark Mount -	Birtle.		
John Newby - -	Millhouses, Hornby, Lancaster.	200	Red Lumb - -	Wolstenholme.		
Peter Nightingale and Co. -	Worsley, Manchester	201	Smear Hall -	Wray-with- Botton.		
Norley Co. - -	Coppull, Chorley -	202	Mesne Lea - -	Worsley -	1	1
Oldham, Middleton and Rochdale Co. (Limited). }	Edge Lane, Oldham }	203	Hicbiy - -	Coppull -	1	1
		204	Bankhouse -	Crompton.		
		205	Boarshaw -	Middleton.		
		206	Hopwood -	Ditto.		
		207	Hanging Chadder -	Rochdale.		
		208	Low Crompton -	Ditto.		
		209	Hartford - -	Oldham -	1	1
		210	Jubilee - -	Crompton -	1	1
		211	Lee - -	Chadderton.		
		212	Robin Hill -	Oldham -	1	1
Frederick Parke - -	Withnell, Chorley -	213	Withnell Fireclay Works.	Withnell.		
Wm. Thornton Parks -	Bury - -	214	Elton - -	Elton.		
Andrew Peake - -	Horwich, Bolton -	215	Wilderswood -	Horwich.		
Exors. of Wm. Pickup -	Over Darwen - -	216	Marsh House -	Over Darwen.		
Joseph Place - -	Ditto - -	217	Hoddlesden -	Hoddlesden -	1	1
Thos. Ramsbottom and Sons	Birtle, Bury - -	218	Birtle Dean -	Birtle.		
William Ramsden - -	Tyldesley - -	219	Messhing Trees -	Tyldesley.		
Ralph Rawstron - -	Whitworth, Rochdale	220	Shakerley - -	Shakerley.		
Rawstrons and Stott -	Littleborough - -	221	Bridge Mills -	Whitworth.		
Ridings Co. - -	Wardle, Rochdale -	222	Rake Pottery -	Littleborough.		
John Rosbottom and Sons -	Heath Charnock, { Chorley.	223	Ridings - -	Wardle.		
James and William Roscoe -	Little Hulton, Bolton }	224	Rawlinson - -	Heath Charnock		
		225	Victoria - -	Rumworth.		
		226	New Lester -	Tyldesley.		
		227	New Watergate and Peel Hall.	Little Hulton -	1	1
Roscow and Lord - -	Chadwick Hall, { Rochdale - -	228	Birtle - -	Birtle.		
Ditto - -	Farnworth, Bolton -	229	Crow Nest - -	Milnrow.		
James Rothwell - -	Halliwell, Bolton -	230	Stonehill - -	Farnworth.		
Peter Rothwell - -	Denton, Manchester -	231	Doffcocker -	Halliwell.		
Rylands and Sons - -	Radcliffe, Manchester	232	Denton - -	Denton -	1	1
Robert Sagar and Brothers -	Simonstone, Burnley	233	Cockey Moor -	Black Lane -	2	2
Schofield & Co. - -	Smallbridge, Rochdale	234	Simonstone -	Simonstone.		
Jethro Scowcroft - -	Bolton - -	235	Dearnley - -	Smallbridge.		
Samuel Scowcroft - -	Kearsley, Bolton -	236	Tonge - -	Bolton.		
Ditto - -	Burnden, Bolton -	237	Kearsley - -	Kearsley -	1	1
Thomas Shaw and Sons -	Haughton, Man- chester - -	238	Rose Hill - -	Burnden.		
		239	Haughton - -	Haughton.		
Shorey Bank Co. - -	Over Darwen - -	240	Haughton Green -	Ditto.		
Thomas Simpson - -	Blackburn - -	241	Shorey Bank -	Over Darwen.		
Thomas Simpson and Co. -	Oswaldtwistle Col- lieries, near Ac- crington - -	242	Lower Darwen -	Lower Darwen.		
		243	Aspen - -	Oswaldtwistle.		
		244	Belthorn - -	Ditto.		
		245	Broadfield -	Ditto.		
		246	Duckworth Hall -	Ditto.		
		247	Mossfield - -	Ditto.		
		248	Stanhill - -	Ditto.		

MR. DICKINSON'S REPORT.

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List of the Owners and Collieries, &c. in the Manchester District—continued.

Owners.	Address.	Number.	Collieries.	Where situated.	Fatal Accidents.	Lives lost.
John Smethurst -	Higginshaw Lane, Oldham.	249	Salmon Field -	Royton.		
Mrs. Elizabeth Smith -	Lostock, Bolton -	250	Moss Hall -	Lostock.		
John Smith -	Higher Count Hill, Oldham.	251	Higher Count Hill	Higher Count Hill.		
John Speakman -	Westleigh, Manchester.	252	Broadfield -	Westleigh.		
		253	Hearts o' th' Meadow	Ditto.		
Stand Lane Co. -	Radcliffe -	254	Stand Lane -	Pilkington -	2	2
Dean Stanley -	Failsworth, Manchester.	255	Whitefield -	Ditto.		
		256	Moston -	Moston.		
James Stott and Co. -	Kearsley, Bolton -	257	Unity Brook -	Kearsley.		
		258	Ashworth -	Ashworth.		
Richard and William Stott -	Rochdale -	259	Butterworth Hall -	Milnrow.		
		260	Tunshill -	Ditto.		
Samuel Stott -	Wardle, Rochdale -	261	Hey Clough -	Wardle.		
James Taylor -	Bacup -	262	New Barn Brick-works.	Bacup.		
John Taylor and Co. -	Littleborough -	263	Hollingworth -	Hollingworth -	1	1
Taylor and Holden -	Coney, Over Darwen -	264	Coney -	Over Darwen.		
Thomas Temperley -	Todmorden -	265	Clough Head Brick-works.	Dulesgate.		
Tenter House Co. -	Wolstenholme -	266	Tenter House -	Wolstenholme.		
		267	Britannia -	Bacup.		
Townsend and Co. -	Greave Collieries, Bacup -	268	Greave -	Ditto.		
		269	Sharneyford -	Ditto.		
Turton Moor Co. -	Turton, Bolton -	270	Turton Moor Brick-works.	Turton.		
Samuel Tweedale -	Rochdale -	271	Tonnacliffe -	Tonnacliffe.		
Jacob Tweedale and Sons -	Ditto -	272	Healey Hall Bot-toms.	Healey Hall.		
		273	Shakerley -	Shakerley.		
Tyldesley Co. -	Tyldesley -	274	Tyldesley -	Tyldesley.		
		275	Combermere -	Ditto.		
The Whitaker Co. -	Whitaker, Little-borough.	276	Whitaker -	Whitaker.		
		277	Marklands -	Blackrod.		
Thomas Whittle -	Duxbury, Chorley -	278	Duxbury -	Duxbury.		
		279	Chorley -	Chorley.		
Charles Whowell -	Two Brooks, Totting-ton, Bury.	280	Monk's Bank -	Quarlton.		
Wigan Coal and Iron Co. (Limited).	Westleigh, Man-chester.	281	Nos. 1 and 2 -	Westleigh -	1	1
John Sutcliffe Witham -	Hapton, Burnley -	282	Hapton -	Hapton.		
John Woodhead -	Waterfoot, Man-chester.	283	Intake -	Brandwood Moor		
		284	Albert -	Westhoughton.		
William Woods and Son -	Blackrod, Chorley -	285	Scot Lane -	Blackrod -	1	1
William Wright -	{ Birches Clough, Crompton, Oldham }	286	Birches Clough -	Crompton.		
Total					61	61

LIST of the FATAL COLLIERY ACCIDENTS, and LOSS of LIFE arising therefrom, in the NORTH and EAST LANCASHIRE OF MANCHESTER DISTRICT, under Mr. DICKINSON'S Inspection, during the Year 1871.

Date.	No. of Accidents.	Name of the Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.				
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.
1871. Jan. 11	1	Habergham	Burnley	Executors of J. Hargreaves	John Ingham	Sinker	27	Stone from the side of the sinking shaft falling upon him soon after a shot had been fired.	-	-	1	-	-
" 14	2	Lowside	Oldham	John G. Blackburn	John Banks	Miner	-	A feather edged piece of roof falling near a fault, died March 6th.	-	1	-	-	-
" 18	3	Great Lever	Bolton	Earl of Bradford	Joseph Hulme	Ditto	19	Roof falling in his father's working place.	-	1	-	-	-
" 31	4	Hoddlesden	Over Darwen	Joseph Place	John Birtwistle	Banksman	26	Falling from part way down No. 3 shaft whilst examining the pumps.	-	-	1	-	-
Feb. 9	5	Brinsop Hall	Westhoughton	Brinsop Hall Co.	James Harper	Miner	49	The cage at No. 4 pit being drawn over the pulley by the engineman starting the engine the wrong way, fell upon him where he was seated on the surface.	-	-	1	-	-
" 22	6	Ashton's Field	Little Hulton	Bridgwater Trust	Joseph Evans	Ditto	21	Roof falling in his working place, died 23rd.	-	1	-	-	-
" 25	7	Robin Hood	Clifton	Clifton and Kersley Co.	James Waring	Pony driver	18	Dropping from the cage about 12 yards from the shaft bottom, as he was amusing himself by laying hold with his hands, intending to drop from about a yard up.	-	-	1	-	-
Mar. 8	8	Stahd Lane	Radcliffe	Stand Lane Co.	Joseph Lomas	Miner	37	Coal falling from a slippery parting as he was holing without any sprag set.	-	1	-	-	-
" 11	9	Jubilee	Crompton	Oldham, Middleton, and Rochdale Co. (Limited).	Wm. Stead	Waggoner	14	Burnt by firedamp; died 15th	1	-	-	-	-
" 18	10	Tooter Hill	Bacup	James Dearden	Saml. Schofield	Miner	45	Coal falling. Having holed he nicked the coal at the side, and began holing again without having a sprag set.	-	1	-	-	-

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of the Colliery.	Where situated.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.			
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.
1871. April 22	11	Raikes -	Great Lever -	Earl of Bradford -	Adam Openshaw -	Waggoner -	14	The break in a jig brow slipped off the drum, and he was struck by the handle.	-	-	-	-
"	9	Spindlepoint -	Kearsley -	Clifton and Kersley Co. -	Nathaniel Wallwork -	Miner -	31	Coal falling upon him as he was taking it down.	-	1	-	-
"	9	Rocher -	Ashton-under-Lyne -	Fairbottom Co. -	Thos. Broadbent -	Ditto -	50	Coal falling. His son was also hurt	-	1	-	-
May 15	14	Bents -	Little Lever -	Thomas Fletcher -	Philip Lomax -	Ditto -	21	Roof falling as he was filling coal -	-	1	-	-
"	23	Ashton's Field	Little Hulton -	Bridgewater Trust -	James Hines -	Waggoner -	16	Falling off the cage in No. 1 shaft whilst ascending.	-	-	1	-
"	24	Watergate -	Middle Hulton -	Ditto -	Wm. Crompton -	Miner -	57	Roof falling from between two slips as he was cutting through to old workings.	-	1	-	-
"	25	Manor -	Kearsley -	Clifton and Kersley Co. -	Thos. Ryder -	Ditto -	32	Coal and roof falling after drawing his sprags.	-	1	-	-
June 5	18	Scot Lane -	Blackrod -	Wm. Woods and Son -	— Seddon -	Locomotive Stoker.	13	Slipped as he was stepping on to the locomotive engine in the colliery siding.	-	-	-	1
"	8	Clamercrough -	Kearsley -	J. Gerrard and Son -	John Simmons -	Miner -	24	Falling or thrown out of the tub in descending the shaft, there being no guides.	-	-	1	-
"	13	Meane Lea -	Worsley -	Peter Nightingale and Co. -	Alfred Price -	Pony driver -	11	Run over by waggons from which he apparently fell as he was riding.	-	-	-	1
"	21	Broughton -	Burnley -	Executors of J. Hargreaves -	James Bower -	Miner -	—	Roof falling, died near Halifax, 3rd August. In consequence of an irregularity the case was not reported to the coroner, and no inquest was held.	-	1	-	-
"	28	Black Lane -	Radcliffe -	Rylands and Sons -	Richd. Southworth -	Dayman -	—	Roof falling as he was drawing props.	-	1	-	-
July 1	23	Robin Hood -	Clifton -	Clifton and Kersley Co. -	James Ellison -	Waggoner -	17	Roof falling at the entrance to his place.	-	1	-	-

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of the Colliery.	Where situated.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.			
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.
1871. July 6	24	Wigan Co.'s 7 feet.	Westleigh	Wigan Coal and Iron Co. (Limited).	Giles Eckersley	Miner	29	Coal falling	-	1	-	-
" 10	25	Bents	Little Lever	Thos. Fletcher	James Hurst	Ditto	68	Coal falling in a bay	-	1	-	-
" 13	26	Stand Lane	Radcliffe	Stand Lane Co.	George Brown	Ditto	-	Coal falling	-	1	-	-
" 17	27	Horrocks Cote	Edgeworth	Peter R. Hoare	Wm. Mather	Sinker	46	Scaffold on which he was working in a trial shaft gave way; died Nov. 1st.	-	-	1	-
" 18	28	Outwood	Outwood	Thomas Fletcher and Sons	John Holt	Hooker-on	29	Caught between two tub waggons, the engineman having drawn the train too far up the brow.	-	-	-	1
" 25	29	Smithfold	Little Hulton	John Gibson and Co.	Adam Smethurst	Miner	39	Roof falling from between two slips in his bay.	-	1	-	-
Aug. 4	30	Tyldesley	Tyldesley	Astley and Tyldesley Coal and Salt Co. (Limited).	Saml. Rodwell	Ditto	30	Coal falling	-	1	-	-
" 11	31	Bradford	Manchester	Bradford Co.	Thos. Lee	Dayman	36	Struck by a stone which fell from the roof, where it was being repaired, and slid 160 yards down to where he was at work.	-	1	-	-
" 16	32	New Lester	Tyldesley	James and Wm. Roscoe	James Redford	Waggoner	13	Crushed and precipitated down the shaft by the cage being started as he was stepping out, the engineman having mistaken the banksman's signal.	-	-	1	-
" 19	33	Hulton Park	Hulton	Wm. Ford Huon	John Worthington	Miner	-	Roof falling in his place in the cannel mine.	-	1	-	-
" 28	34	Howe Bridge Six Feet.	Atherton	John Fletcher and others	John Unsworth	Ditto	38	Coal falling from the face of his place.	-	1	-	-
Sept. 1	35	Cat Hall	Baxend	Geo. Hargreaves and Co.	Pilkn. Entwistle	Ditto	28	Roof falling at a fault in his place	-	1	-	-
" 8	36	Farnworth Bridge.	Little Lever	Andrew Knowles and Sons.	Wm. Perkins	Ditto	47	Roof falling	-	1	-	-
" 12	37	Blainscough Hall, No. 1.	Coppull	James Darlington	Richd. Roorcroft	Ditto	-	Coal falling in his place; died 13th	-	1	-	-

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of the Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.			
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.
1871.												
Sept. 25	38	Denton -	Denton -	Peter Rothwell -	James Moore -	Miner -	57	Roof falling as he was taking down coal in a level.	-	1	-	-
Oct. 4	39	Bradford -	Manchester -	Bradford Co. -	John Siddall -	Ditto -	-	Roof falling in his place -	-	1	-	-
" 5	40	Dunkenhalgh Park.	Church -	Trustees of Jos. Barnes -	John Ramsbottom -	Waggoner -	17	Roof falling as his getter was at work.	-	1	-	-
" 13	41	Ladyshore -	Little Lever -	John Fletcher -	John Walkden -	Miner -	46	Fire-damp explosion -	1	-	-	-
" 19	42	Kearsley -	Kearsley -	Samuel Scowcroft -	Moses Dawson -	Youth -	-	Caught by a beaver four yards from the bottom on putting his head out in descending the Doe shaft.	-	-	1	-
" 18	43	Heyfield -	Westleigh -	James Diggle -	Wm. Sharples -	Miner -	32	Coal falling whilst holing -	-	1	-	-
Nov. 7	44	Robin Hill -	Oldham -	Oldham, Middleton, and Rochdale Co. (Limited).	John Geary -	Ditto -	-	Coal falling; died the 8th -	-	1	-	-
" 8	45	Lovers' Lane, 5 feet.	Atherton -	John Fletcher and others -	Ralph Whittle -	Ditto -	20	Coal falling while taking out his props.	-	1	-	-
" 8	46	Hulton -	Hulton -	Wm. Ford Hulton -	Peter Rothwell -	Siding man -	-	Slipped and was caught between two railway waggons as he was putting on the break at No. 13, $\frac{3}{4}$ pit siding.	-	-	-	-
" 13	47	Denton Lane -	Chadderton -	Chamber Co. -	Thos. Shepherd -	Miner -	33	Roof falling, in removing a prop; died 16th.	-	1	-	-
" 14	48	Wet Earth -	Clifton -	Clifton and Kersley Co. -	Danl. Mann -	Ditto -	54	Coal, &c. falling from the face of his place.	-	1	-	-
" 15	49	Ringley Fold -	Stoneclough -	Knowles and Stott -	Thos. Nelson -	Waggoner -	14	The weld of a link in a coupling chain opened, and let a train of tubs run back upon him in a shunt.	-	-	-	1
" 15	50	Lee -	Bacup -	Thomas Leach -	Isaac Greenwood -	Boy -	12	Roof falling -	-	1	-	-
" 18	51	Woodpark -	Ashton-under-Lyne -	Fairbottom Co. -	John Kenyon -	Miner -	27	Ditto -	-	1	-	-
" 18	52	Hicbibi -	Coppull -	Norley Co. -	John Winstanley -	Boy -	13	Crushed at the top of the pit in attempting to enter the cage when in motion.	-	-	1	-
" 18	53	Fearnside -	Little Lever -	Andrew Knowles and Sons -	Henry Hall -	Miner -	57	Roof falling; died Dec. 1st	-	1	-	-

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.				
									Explosions.	Falls of Roof.	In Shafts.	Miscellaneous.	Above ground.
1871. Nov. 25	54	Black Lane	Radcliffe	Rylands and Sons	Wm. Isherwood	Hooker-on	36	An iron cup which was struck off the ascending cage on entering the wooden guards at the upper part of the wire rope conductors falling upon him at his work.	-	1	1	-	-
"	29	Bradford	Manchester	Bradford Co.	John Massey	Waggoner	16	Overpowered by a loaded waggon he was pushing in a trow.	-	-	-	1	-
Dec. 2	56	Outwood	Outwood	Thos. Fletcher and Sons	Thos. Booth	Assistant hooker-on.	20	Falling down the shaft from the four feet mounting.	-	1	1	-	-
"	11	Ditto	Ditto	Ditto	James May	Waggoner	-	Roof, &c. falling as he was filling coal at a fall in a level.	-	1	-	-	-
"	13	Spindlepoint	Kearsley	Clifton and Kersley Co.	Robt. Hargreaves	-	-	Roof falling, Trencherbone mine -	-	1	-	-	-
"	19	Hartford	Oldham	Oldham, Middleton, and Rochdale Co. (Limited).	Henry Mellor	Miner	-	Thrown out of the cage in ascending the shaft. He and three others having got in at a mouth- ing, the cage oscillated so much with the wire rope conductors as to catch under one of the bearers for the pumps.	-	-	1	-	-
"	20	Woodpark	Ashton-under-Lyne	Fairbottom Co.	Wm. Etchells	Waggoner	11	Overwound in ascending the shaft -	-	-	1	-	-
"	21	Hollingworth	Littleborough	John Taylor and Co.	Thos. Lord	Miner	36	Explosion of fire-damp; died 3rd January.	1	-	-	-	-
Total, 61 accidents and 61 deaths									3	37	14	5	2

SEAHAM COLLIERY EXPLOSION.

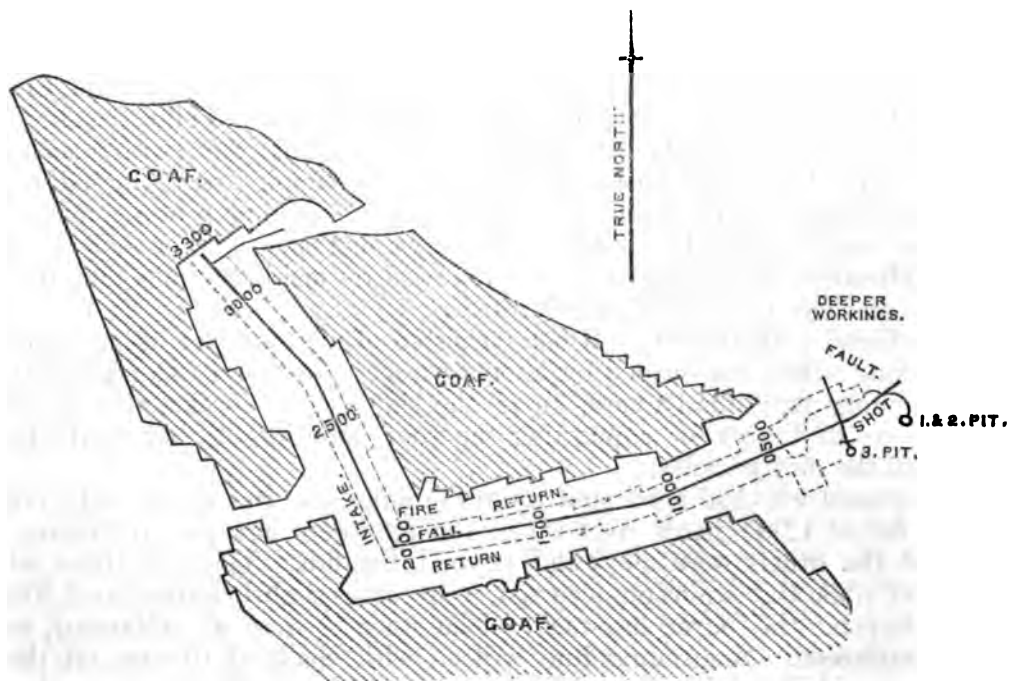
South Bank, Pendleton, Manchester,
26th January 1872.

SIR,

IN obedience to your instructions of the 13th instant I, on the 17th, accompanied by my brother inspector Mr. Willis, the resident viewer Mr. Wm. Daker, and the under-viewer Mr. Jos. Thompson, made a preparatory inspection of the Seaham Colliery; and on the 18th and 19th attended the adjourned inquests held at Seaham Harbour by Mr. Maynard, coroner, on the bodies of the 26 persons who lost their lives consequent upon an explosion of firedamp, which occurred in this Colliery on the 25th October 1871.

The Colliery consists of extensive workings won by two shafts formerly known as Seaham and Seaton, but which are now united under the ownership of Lord Vane. One of the shafts, which is the downcast, is divided by a brattice, and is called No. 1 and No. 2 pit, one half of which is used for working the Hutton seam at 256 fathoms, and the other half for the same seam at the opposite side of a fault 28 fathoms deeper. The other shaft is called No. 3, and is the upcast for the workings at both sides of the fault. There are also workings in the Maudlin seam, which lies next above the Hutton seam, and some in the main coal above that, all worked by the same shafts; but there is a staple pit below-ground by which air goes from the Hutton seam into these two seams, and the return air currents from the Hutton seam workings at both sides of the fault are taken up in separate staple pits to the main coal before entering the No. 3 shaft.

It is only the workings in the Hutton seam at the high side of the fault which appear to be connected with this explosion. These workings consist of a long narrow and nearly rectangular strip, at the far end of which, about 3,200 yards from the downcast shaft, the pillars are being worked, with the goaves of former workings behind and on each side, as shown on the annexed sketch.



The air for these Hutton seam workings consisted of about 27,000 cubic feet per minute, which went in by one main in-take and came back by two return air-courses, with the in-take between them. The air from the two returns ultimately united with another return of about 6,000 cubic feet p.m., and after running together in a mixing drift for about 100 yards, passed through the furnace.

A change it may be stated had taken place in the chief viewership about two years previously, but the objectionable leaving of the present pillar workings to be got between goaves had been done before that time; therefore, in this inquiry nothing turned upon these points.

The circumstances elicited at the Inquest were at follows:—

The explosion took place at 11.30 p.m. on the 25th of October; and immediately after the occurrence, on explorers descending, the ventilation was found disarranged, with much after-damp in the workings. As speedily as possible such of the survivors and of the dead bodies as could be reached were sent out, and the work of repair was

commenced to get to the other 22 at the far end. By noon next day (the 26th) the main in-take had been penetrated to a distance of 2,200 yards from the downcast shaft. The stoppings and other partitions up to this distance being, however, but imperfectly repaired, the air was scarcely respirable, and the after-damp had to be driven forward by moving a tarpauling screen like a piston along the in-take.

Having got to some stables it was found, on taking a look over the tarpauling, that fire was burning. The party consisted of four officials, namely, two back overmen, a master shifter and another, with about 20 miners. No firedamp had been met with up to this time, but it was known that the surrounding goaves where the coal had been worked out were likely to contain firedamp. So soon therefore as the fire was discovered, the miners, apparently fearing another explosion, speedily retreated. The officials, finding the fire too large to deal with alone, or rather despairing of dealing with it at all, put up a screen to keep what little current of air there might be off the fire, and retired also. The miners, running out, met the under-viewer accompanied by two neighbouring viewers coming in, but they passed on without stopping. The officials came next, and told what they had discovered and done. They appear to have been collected in their minds, and turned back to accompany the three to make further examination. On the way, however, from the description which the officials gave of the fire and the situation appearing so alarming and the chance of saving life beyond so hopeless, other council prevailed, and the party turned back to report and consult as to what was best to be done. They found all the men had gone out of the pit. A panic had set in. No one volunteered to make further examination of the fire, and no one would take the responsibility of issuing an order to that effect. The fire, therefore, was not seen a second time.

A conference thereupon took place over the plan in the Colliery office, the principal viewer Mr. V. W. Corbett, Mr. John Taylor, Mr. R. F. Matthews, Mr. Lindsay Wood, Mr. Hepplewhite, and Mr. Turnbull being present; and, after hearing the statements of the officials who had seen the fire, and like them despairing of rescuing alive any of the 22 persons who remained in the pit, it was unanimously resolved that, to avoid as much risk as possible, the workings should be shut off by stoppings near the shaft to extinguish the fire. This decision, it is proper to state, was approved of by Mr. T. E. Forster, the veteran viewer of the district, by Mr. Willis, Her Majesty's inspector of mines for the district, and by his colleague Mr. Southern, before being carried into effect. The shutting off was set about at 10 p.m. on the 26th, and by 5.10 p.m. next day (with a safety valve to let off the pressure that might ensue) the pipe in each stopping was plugged.

The re-opening commenced on the 17th of December. The plug of a stopping in one of the return air courses was drawn first, and afterwards that of the one in the in-take. Finding the indications satisfactory this was followed by making a hole, and ultimately the far end was reached on the 20th of December.

The fire was found extinguished. It had consisted of nine bundles of hay, and of the solid coal adjoining which was burned for about two feet deep, and extending beyond at a gradually lessening depth for 13 yards along the side of the in-take, also a "chock," composed of pieces of timber for supporting the roof opposite the hay, and a hay-rack 31 yards beyond the nine bundles.

Of the 22 deceased who had been shut up in the mine, one was found sadly mutilated under a large fall at 1,900 yards over which the explorers had passed before the pit was shut; but the others were all found beyond the fire. Three of them who had been coming out when the explosion occurred, were found slightly burned at 2,300 yards, being a little beyond the burnt hay-rack. The other 18 were all unburned, and had survived the explosion. A memorandum written with chalk at 10 a.m., on the 26th, and signed by David Ballantine, recorded that at that time one man (whose body was found outermost) had died. There was also a figure 6 close to what was supposed to be Ballantine's hand. The deceased's footsteps were plainly discernible on the newly settled dust; and apparently they had unavailingly made every effort to escape. Two air-doors at an entrance into one of the returns were found propped open, as though the men, having tried for an outlet that way and finding the air irrespirable, had set the doors open to let the after-damp and smoke from the fire get away without coming to them inbye. Six others had apparently died in making a last effort. They were found at 2,900 yards with a tarpauling, which it was supposed they had been carrying in front to force back the after-damp. Eight others were found at 3,100 yards. And the last (an experienced old miner, who had survived one if not two similarly dreadful emergencies,) was found with a grease pot and a scuttle of grease behind an air-door at 3,200 yards with the door closed and the crevices greased up; doubtless done by him to keep out the after-damp and smoke. He is supposed to have been the last survivor. His drinking bottle was empty, but some of his food remained. There was nothing to show the

exact time when death ensued, but suffocation had in all probability done that work before the pit was closed.

The circumstances altogether were such as to arouse public sympathy, and to demand a searching investigation. Hence, together with the fact that the neighbouring colleague of the inspector for the district took an active part during the emergencies, and prior to his appointment of inspector had acted in the management of the Colliery, applications were made for entirely distinct assistance to the district inspector, which occasioned my being sent down.

At the time of the explosion a shot was being fired in the main in-take, within 300 yards of the downcast shaft. On the opposite side of the in-take there was an entrance with a wall across it and a pipe through to the water standage, and further inbye there were other entrances. Parts of the standage, together with some adjoining drifts, were ventilated by return air; parts by a leakage allowed through a stopping, and part was stowed with rubbish and inaccessible. Two men had been working in the standage that day, but the other parts had not been examined since the preceding day. A short level at the opposite side of the standage was found with the coal and roof much charred, and with props that had nearly been set on fire. The horses in a stable near were killed, the one next the level being burned. The return air crossed twice over this burned level, and one of two partitions forming air-crossings was found blown upwards from the level. Further in, at the side of the north return air-course, at 600 yards from the shaft, some old stables were found burned. The appearances in the main in-take showed that the principal pressure of the blast had been in it; with slight traces of burning from near the downcast to 2,300 yards inbye, where it apparently tailed out. The man Hutchinson who fired the shot near the standage was much burned, and his son, who was near him, was burned and blown to death. The former stated that the flame of the explosion came when the shot went off, but not before. Two other men who were out of the range stated that on hearing the shot they said "There's Hutchinson's shot gone," and then the rush of the explosion arrived; and one of them described that in four or five minutes a second distinct explosion followed, all three men at the time of the occurrence saying that the shot had done it.

The shot was immediately over a gas pipe $1\frac{1}{4}$ inches in diameter by which that part of the mine was lighted with gas from the surface. Before firing the shot, two or three stays had been hammered up against this pipe to protect it, and as after the explosion, the pipe was found broken a little outbye, it was supposed possible that the hammering might have broken it. But as the whole of the 27,000 c. feet of fresh air per minute was passing the spot, besides all the air that went to the staple pit for the Maudlin and Main coal workings, it was considered impossible that leakings from the broken pipe could have occasioned the explosion, but rather that either the shot or the explosion had broken the pipe.

The fall at 1,900 yards was at what is called the bank top, or head of the second plane, where the workings are 50 fathoms higher than at the shafts. Inbye from this fall the markings of the blast on the props faced outwards, and outbye they faced inwards, indicating that the main blast had radiated from the fall. The roof there had fallen about a dozen years previously, and was timbered in such a way as to leave a space above, called a lofting, about 132 feet long by 10 feet broad and 6 feet high. Had this space been filled with firedamp the main explosion as indicated by the blast would be explainable from that source alone, but scarcely the keen burning near the water standage 1,500 yards away. This lofting was all found down after the explosion and fresh stone fallen from above. An hypothesis was therefore started to the effect that an outburst of firedamp, assumed at 100 cubic yards, had forced the roof down, and that this gas mixing with air fired at the open light which was there allowed. The hypothesis went to the extent of supposing that had it been a Davy lamp instead of an open light the result would have been all the same, as the gauze heats and passes flame at a velocity of eight feet per second, which would be more than attained by the current and outburst. The 100 cubic yards having been assumed, the remainder was a matter of figures. The addition of 800 of air made 900 of explosive mixture, and according to Marriot's law, the volume on being exploded would expand $\frac{1}{459}$ th part for each degree of Fahrenheit, and taking the temperature of exploded gas at 15,000°

$\frac{15,000}{459} = 32 \times 900$, a volume of 28,800 cubic yards was obtained, the sudden entry of which it was explained would force everything before it.

This plausible idea involved some anomalies. The roof according to the under-viewer's evidence had not been known to give off firedamp, and it left both the second explosion deposed to and the simultaneity of the firing of the shot unaccounted for.

I suggested in cross-examination that the shot might either have lighted gas from the pipe, or in the standage or adjacent workings, or have wafted out gas to an open light; and that this occurrence either blew gas out of the lofting on to the open light allowed there, or that it blew up the air crossing into the return, and admitted pressure which drove gas from the goaves into the in-take, where it would travel to the open light at the lofting, thus fixing the main explosion at the fall whence the blast radiated, and accounting also for the second explosion, as well as the simultaneous occurrence of the first with the firing of the shot.

The hypothesis as to the outburst was, however, supported by too many influential witnesses to be invalidated. The resident viewer hinted at it in his evidence at the outset, and the idea was supported by the under-viewer. Later on it was effectively introduced by Mr. Wm. Armstrong, and corroborated by Mr. E. F. Boyd, Mr. R. F. Matthews, Mr. John Taylor, Mr. Lindsay Wood, and Mr. T. E. Forster, all viewers of experience and high standing. It was also concurred in by Mr. Willis, who, although he saw a difficulty, could come to no other conclusion.

The jury, therefore, upon the evidence returned a verdict accordingly, and exonerated all from blame.

The circumstances under which blasting should in future be allowed, and the limit for open lights, with goaves at each side of the workings, are questions for the viewers, and have, it appears been considered by them and Mr. Willis.

I have, &c.

JOSEPH DICKINSON,
Inspector of Coal Mines.

The Right Hon. Henry Austin Bruce, M.P.,
Principal Secretary of State,
Whitehall.

Mr. Higson's Report.

REPORT of the WORKING of the MINES INSPECTION ACT (23 & 24 Vict. c. 151.)
in the WEST LANCASHIRE and NORTH WALES DISTRICT, during the Year
ended 31st December 1871.—By PETER HIGSON, Esq.

SIR,

Swinton, Manchester, February 28th, 1872.

I HAVE the honor to transmit herewith the following Report of my proceedings in the year 1871 as Inspector of the Mines of Coal and Ironstone in the district under my inspection which comprises West Lancashire and North Wales.

There happened within the year, and in the district under consideration, 111 fatal casualties which caused the death of 194 persons or 7 casualties and the loss of 64 more lives than happened in 1870. Explosions were the same in number in each year, but in 1871 they caused the death of 59 more persons than those of 1870. Falls in mines were 6 more in 1871 than in 1870 causing 7 more deaths. Accidents in shafts were fewer by 5, and the loss of life by 5 in the last than in the previous year. Miscellaneous casualties below ground were more by 2 and the loss of life less by 2 in 1871 than in 1870. Above ground there were 5 more fatal casualties, and the loss of 5 more lives in the last than in the previous year.

The loss of so many valuable lives while pursuing a peaceable occupation is a matter for serious consideration. It may traced to various sources such as inadequate supervision, and the absence of proper skill in the management of the works, insubordination and recklessness on the part of the workpeople, the misuse of gunpowder in and for blasting the coal and the inefficiency of the Act for the Regulation of Mines.

Colliers are of necessity left more to themselves than any other class of operatives, and the managers of mines too often depute to others duties which they should discharge themselves, and the owners of mines occasionally appoint men as managers who are not equal to their duty, and underlookers as a rule are not sufficiently educated or trained for their position they are frequently incapable of governing the men who defy all authority, and are in the habit of disregarding any regulations that may be made. The system of blasting the coal with gunpowder has now become the general practice, even in mines in which only a few years ago it was never used. They have passed from one extreme to another. Until of late large shot holes have been made and a larger quantity of gunpowder used for each for each shot than is consistent with safety. I have known men put in 2 lbs. for one charge. Now if a great number of such shots were to be fired in succession they might seriously affect the ventilation of a mine, and the flame therefrom might ignite gas if any happened to be liberated by so many shots. Blasting, therefore, in fiery mines ought to be strictly prohibited, except only in the absence of the workpeople and should then be performed by competent persons employed for that purpose.

The Act does not provide clauses necessary to enforce the proper use of gunpowder. It certainly contains no useful restrictions there is an arbitration clause, it is true, which gives the mine proprietor or his agent the power of nominating all the arbitrators in case of dispute which is all but equivalent to allowing him to find his own verdict. Many more objections could be raised, but it appears unnecessary as the new bill before Parliament may remove them all.

I have had occasion, during the year 1871, to enforce obedience to several sections of the said Act, for the non-observance of the first general rule at Wern Colliery, Bagilt, and at Coleshill Colliery, Holywell, for disregarding the 19th section, and at the Works of the Wigan Coal and Iron Company, Haigh, Wigan, for not observing the 11th general rule. Penalties were recovered in the two first cases, but in the last the magistrates decided that the case had not been proved. The slipping of a rope on a drum had caused the death of a man, and the information was laid on the 11th general rule which says every drum shall have flanges or horns by which persons descend and ascend the pit evidently "to prevent the rope getting wrong" which description the rule omits. It should therefore be altered in the new bill.

The practice of taking gunpowder down the pit in cartridges commenced after a meeting in 1869 which I had with a number of colliery owners and managers after a

serious explosion in the district, which caused great loss of life. They suggested at one of those meetings that only one shot at a time should be fired, that before a second shot be fired an inspection be made of the result of the previous one, and that gunpowder should only be taken into the mine in cartridges of the proper size.

That copper headed rammers only be used for charging shots and that no missed shots should be drilled out. A practice then prevailed of blasting without nicking the side of the place which still continues and of conducting the current of air too far by means of brattice, to both of which practices I raised a strong objection. They admitted their inability to make the men nick the coal as they formerly did and thought the application of brattice could not be properly defined, but that it should be left to the discretion of the manager of each particular mine as to the distance openings should be made apart between the intake and return air courses. Now many of these suggestions, particularly the use of copper-headed rammers, and as to the drilling out missed shots were prohibited by the special rules, but as regards blasting without first nicking the side, it was never thought of or practised when the rules were prepared. It is one of the evils which time and combinations have produced, and it has now become a very serious one, unless the side of the place be nicked blasting requires a much larger quantity of gunpowder in the charge to bring down the coal, and shots much more frequently blow out the charge, and produce great flame, which near a goaf or places which have been suspended, is very dangerous, unless they have been first carefully inspected, and it has been ascertained that they contain no gas, which in the case just mentioned is not always practicable. Flame may extend a long way into a goaf beyond that which a man can approach to make an inspection. It is therefore manifest that nicking the coal is a very important operation. As brattice is so liable to be broken down by a fall of roof or by trams and tubs and the air beyond that point cut off from the extreme end of the places. Ventilation by such means should in all cases be limited. I stated the extreme length of 20 yards which in some mines is quite as far as it is safe to trust with bratticed air which is often carried to many times that length. Although iron rammers are prohibited by the special rules, the persons using them invariably pass beyond the reach of the law, and drilling out missed shots is a violation of the rules I have never yet found though I have no doubt it is often practised. The use of cartridges is a new and a very important regulation, and one that is growing in favor with the public. Where it is in use there is no possibility of men putting too much gunpowder in a shot or of having explosions with it loose, which has often happened. Until a very recent period it was customary for colliers to hole the coal and nick the side of the place, and then get down the coal with the hammer, and wedged nicking is now all but totally abandoned, and unless the men are carefully watched holing under the coal will be ultimately given up also.

The use of gunpowder will be made to supply the place of both. It requires so much less labor. Holing and nicking are useful operations, I may say necessary precautions even, before blasting. The resistance of the coal is thereby lessened and the production of flame reduced to a minimum. Less gunpowder would be required for blasting and there would be fewer blown out shots which frequently cause a disaster.

Every coal miner either knows or ought to know how to detect the existence of gas, so that if ordinary care and attention be exercised explosions as a rule should not occur. In the event of gas being discovered every man and boy should leave the place and inform the underlooker or fireman who should at once inspect it and cause it to be removed before the workpeople are allowed to re-enter.

Nearly every explosion causing great loss of life has been produced by the misuse of gunpowder by firing shots in the neighbourhood of gas, accumulated or passing along in the air in places where men were allowed to charge and ignite their own shots, and often to do much as they liked. Such careless regulations have in many places now ceased to exist. Under the new and improved system no collier is permitted to have gunpowder in the mine, unless it be confined in cartridges of the proper size, nor is he allowed to charge or fire a shot; competent persons being employed for that purpose, who are only to do so when they have previously made a proper inspection in the absence of the ordinary workpeople, who "drill" the shot holes before they leave off their work for the shift.

Although explosions appear the most dreadful catastrophes to which miners are liable, inasmuch as the loss of life is frequently greater therefrom than from any other cause, yet upon perusing the accompanying list of the loss of life, and that from every other district since the first Act was passed for the regulation of mines, it will be seen that the aggregate loss from other causes has been far greater. That from falls of roof and falls of coal has been excessive, and from such causes the men have a remedy in their

own hands, they neglect too often to fix a sufficient number of props and sprags, which the special rules require. From careless riding down and up the shafts. And from approaching the mouth of the pits and mouthings incautiously, whether by day or in the night, and from running trams and tubs recklessly below ground. As regards accidents above ground they also are numerous, and one can only wonder how they in many instances can possibly have occurred unless men keep an eye to their own protection better than they have hitherto done, no diminution of the number need be expected, no amount of inspection can prevent them. There may be misadventures occasionally, but most of those in the present list belong to a different class. They are the result of recklessness or carelessness.

The fundamental part of the education of a miner consists in obeying orders and acquiring a practised eye to see what is going on around him; there have been so many and such alarming explosions of gas throughout the country, people have become seriously alarmed. The public mind is now prejudiced against the use of gunpowder in mines, they attribute every disaster to blasting, forgetting that if there was no gas present there could be no explosion, although it must be admitted that its existence in a mine, however small its quantity may be, makes blasting a very dangerous operation. It is for that reason a practice has now been adopted in my district of firing all shots in the absence of the ordinary workpeople, who drill the shot holes during the day, and competent persons are then employed to charge the holes with cartridges, and after proper inspection fire them. If the holes are not properly placed, they are not charged. This has been the practice now at some collieries for two years, and has hitherto been very satisfactory. There are some mines that cannot be worked at anything like a reasonable cost without the use of gunpowder or some other explosive article, I am of opinion, therefore, that this system might be permitted in any mine when all the workpeople are absent. Two careful and competent men are capable of charging and firing many shots with comparative safety in the stillness of night, when the current of air is undisturbed by the opening and shutting of doors. The same regulation applies also to stone in sinking, tunneling, and blowing the roof down and floors up to enlarge the roads, and should be strictly carried out.

The new Bill now before Parliament should make the use of safety lamps compulsory in mines that emit inflammable gas. It should prohibit blasting in such mines with any article that produces flame, except only by competent persons after a careful inspection of the place, and also of those adjoining on every side has been made and found free from gas, and when the ordinary workmen are out of the mine. The rule as it now stands prohibits blasting where safety lamps are used, unless it be altered people who now use safety lamps as an extra precaution will in all probability discontinue their use, even at a great risk, in order that they may blast the coal and thereby get it at a cheap rate. As many important things may arise for which the Bill makes no provision, and on which the inspector may have to resort to arbitration, the law on that point should be made very clear, each party should appoint an arbitrator, and the two arbitrators should appoint there own umpire, whose award should be binding on both sides.

There is now a great desire among the owners of mines and their managers to do all they can to prevent loss of life. They now see that casualties may and do happen in what to them may appear unlikely places. Mines are now being worked at a much greater depth than they were formerly and the existence of gas therein is more frequent and plentiful than formerly. The extreme depths at which they are now won and worked in this district is nearly 2,450 feet and at that depth the heat of the atmosphere therein is frequently 90°. This may also cause them to be uneasy as to the result, but hitherto the deep mines have been more free from casualties than those which are now worked at a less depth.

Loss of Life from Explosions.

1871, June 12th. The first explosion of the year which caused loss of life happened this day at the Wern Colliery, Bagilt, belonging to Mr. David Jones. The deceased who was working with others in an outside wicket was severely burned by an explosion which was occasioned by a fall of roof driving some gas to his naked light with which they were all working. It exploded and caused his death; the others were not much injured. I made an inspection of this mine on the day following and found the ventilation inadequate. I therefore, by your instructions, instituted proceedings against the owner for not observing the first general rule of the Act and recovered a penalty of 10/.

August 2nd. At the Brimelow Field Colliery, belonging to the Wigan Coal and Iron Company, a contractor had undertaken to drive a tunnel through the coal measures

and to blow down the strata with gun cotton. The work had been carried on successfully for some time, until the present occasion, when, as the deceased, William Cope, an experienced man, was putting in a charge the gun cotton exploded and caused his death.

September 6th. The most serious casualty of the year, or that I have ever known, happened in the Wigan 9 feet mine at the Moss Pits, Ince, Wigan, belonging to Messrs. Pearson and Knowles. To this mine the shafts are 15 feet in diameter and 460 yards deep. At the time it occurred 64 persons were at work therein, and 6 other men were sinking down the upcast pit to another seam below, amounting altogether to 70. At the depth of 560 yards, and in the same pits, the cannel mine was being worked and a number of workpeople were employed there at the time. They were all got out uninjured, but the bodies of 68 persons killed no doubt by the first explosion still lie in the 9 feet mine and in the upcast pit. In exploring the workings the mine was discovered to be on fire, and another slight explosion caused the explorers to give up the attempt to recover the missing bodies. A consultation of mining engineers was then held and they were unanimously of opinion that the pits should be sealed. Operations for that purpose were then started and fully executed on the following day, and an outlet for gas and smoke was provided on the top of the upcast pit. Smoke and heat gradually abated day by day, until the first was imperceptible and the latter had lowered to the natural heat of the pit, when on the 19th instant another consultation of engineers was held; and on that occasion they were unanimously of opinion that the pits might be safely opened and the body of the workpeople recovered from below. On the pits being uncovered another explosion took place of a most terrific character, the flame from which could be seen 50 yards above the surface. It caused the death of 5 men who had been removing the coving over the pits, one of whom fell down the pit and lies there still. There now appeared no other resource than that of filling the workings and pits with water. That, however, was a very tedious undertaking, as water in the neighbourhood was not plentiful. It was, however, ultimately accomplished, and in a few weeks afterwards operations were commenced to get out the water and recover the bodies of the people lying below, and they have since then been actively continued, but with unavailing effect. The upcast pit has been very seriously damaged by the explosion and the heat of the fire. The casing or lining has collapsed in many places for a considerable length which has to be replaced as the workpeople descend, so that the inquiry stands adjourned to 18th of April next. The workings are of limited extent as may be seen from the accompanying plan marked A. It was scarcely a year since they first commenced to get coal there, and since that time I have made two thorough inspections thereof, and I was on the point of making a third. I found the mine was emitting gas very freely on both occasions, that the coal was loosened by gunpowder, and that a smaller quantity of gunpowder was put into each charge than usual.

When the fire was reported by the explorers I had some doubt of such being the fact. I could not see any strong indication for a long time, neither was there any appearance of the mine being on fire before the third explosion. That a quantity of gas must have been ignited there can be no doubt, but how or by what means I have not the remotest idea, and it is now very doubtful if I shall ever be able to trace the cause to its origin, inasmuch as all marks that might have guided me in the inquiry will be obliterated.

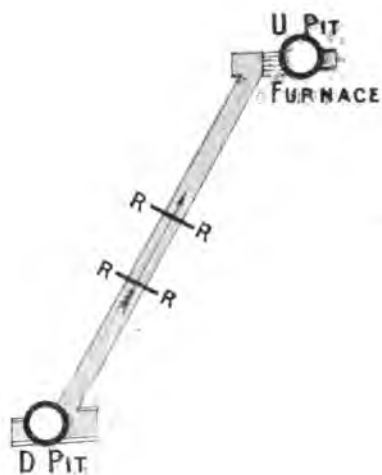
The mine was under the care of two careful underlookers, and it was said that all the men were selected for their sobriety and care. I believe no expense would have been spared by the owners to prevent the loss of a single life, so that this casualty has been felt as a severe blow. They have been previously free from such distressing events in a great measure, which was considered due to the great care they took of their works and of those they employed. It is difficult to estimate the loss this will have caused besides the loss of life, but it will be very great.

September 17th. An explosion happened at the Gardden Lodge Colliery, Ruabon, in consequence of the deceased William Williams going into a place with a naked light which contained some gas contrary to the special rules established there.

November 15th. An explosion happened at the Hindley Green Colliery, Wigan, which caused the death of 6 men. Nearly 4 years ago a serious explosion happened at this colliery and in the same mine, which is called the Arley Mine, which caused great loss of life, as believed by many by blasting. Since that time no blasting has taken place for getting the coal, but for blowing down the roof to enlarge the roads it was indispensable, and an operation for that purpose was being practised on this occasion when an outburst of gas issued from the floor of an upbrow in the mine which had been made for years. It was not more than 8 feet wide and about 5 feet high, the thickness of the mine and the floor dirt. It so happened that four of the men, colliers and labourers,

Y,

PLAN SHEWING FURNACE IN WIGAN FOUR FEET MINE



Sketch of the Workings
in the
ARLEY MINE AT HINDLEY GREEN
At the Time of the Explosion Nov.

B.

were at work that night and they perished together with the two men who were engaged to blow down the roof. The place from which the outburst issued was not more than 60 yards from the shot hole, towards which a strong current of air was blowing, which I found by measurement to be 13,000 cubic feet per minute. About 60 yards on one side there was a goaf, but between that and the upbrow in question there was a return air course uninjured. Under the circumstances it was difficult to say whether the subsidence of the goaf had so broken the floor of the mine and so liberated the gas or it was the natural issue of the strata, such as frequently has happened before. It is therefore manifest that there cannot be perfect safety in blasting in any mine that emits gas, and that it should be strictly prohibited when the workpeople are in the mine, and only permitted when necessary in their absence, and then only by competent persons employed for that purpose. A fireman was going through the workings that night and he should have seen that the place was clear of gas and safe, but it must have come upon them suddenly and in a place too being an intake air course when and where it was not likely to be expected. The plan B shows the workings where the casualty took place.

Loss of Life from Falls in Mines.

January 7th, 1871.—A casualty happened at the Mostyn Colliery in Flintshire, which caused the death of four men who were considered experienced colliers. They were employed to work in a wicket, about eight yards wide, in the direction of the rise of the mine, but instead of working there they went into an adjoining place, which was suspended, and removed some timber which had been set there to support the roof and sides. Their only object in doing so was to liberate the coal without much labour and so have an easy day's work. They were all killed.

June 5th.—A man named Twist and his son were both killed by a fall of roof in the Haydock Colliery under circumstances of an unavoidable kind. The rest of the casualties of the year, 51 in number, caused the death of 51 persons or one by each accident, if accidents they can all be called; but most of them happened through the neglect of the persons who suffered to set props and sprags for their own protection, and often, after having been ordered by the underlooker to do so. A misadventure may occasionally occur with the most careful men; but, as a rule, there is really little or no care in miners. The works are now very actively carried on in most places, and the state of the places are undergoing a gradual alteration; nothing remains in a quiescent state long together. Working one mine underneath another is now frequently done, and much to be deprecated as a practice, inasmuch as it fractures the strata and causes it to fall unexpectedly when the coal is being subsequently removed in the upper one. Not a single case has come to my knowledge of any of the men being short of prop timber.

Loss of Life in Shafts.

15 casualties, causing the death of 15 persons, have happened in shafts; eight while descending and ascending, two by things falling from surface, and five from falling from part way down the pit. No rule has been broken, and no blame attaches to the owner or manager in any case; but in one instance the hooker-on, by giving a wrong signal, caused the death of a boy. All the machinery, pit ropes, &c., were in a proper working state.

Miscellaneous Casualties below Ground.

Under this head 20 persons have been killed by 21 separate casualties; one by suffocation in the refuse from a chemical manufactory which had run into the mine, one by falling into water, two on inclined planes, 13 by trams and tubs, one by machinery, two by sundries. In every case but two death has been caused by the want of care and discretion on their own part or that of others.

I have the honour to be

Your very obedient servant,
PETER HIGSON.

The Right Honourable H. A. Bruce, M.P.,
Secretary of State,
Whitehall, London.

LIST of the FATAL COLLIERY ACCIDENTS, and LOSS OF LIFE arising therefrom, in the WEST LANCASHIRE and NORTH WALES DISTRICT, during the Year ending 31st December 1871.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives Lost.			
									Explosions.	Falls of Roof.	In Shafts.	Miscellaneous.
1871.												
Jan. 5	1	Holland Colliery	Upholland	Wigan Coal and Iron Co.	John Wiswall	Drawer	23	Injured by trams and tubs -	-	-	-	-
" 6	2	Lindsay Haigh	Wigan -	Ditto -	James Rowe	Collier	45	Fall of roof -	-	1	-	1
" 7	3	Mostyn Quay	Holywell (near)	Mostyn Colliery Co.	John Hughes	Ditto	47	Ditto	-	-	-	-
" 8	4	Park Lane	Wigan -	Mereer and Evans	Edmund Parry	Ditto	44	Ditto	-	4	-	-
" 9	5	Hindley	Hindley, Wigan	Wigan Coal and Iron Co.	Wm. Jones	Ditto	28	Ditto	-	-	-	-
" 10	6	Park Lane	Wigan -	Mercer and Evans	Robert Jones	Ditto	19	Ditto	-	-	-	-
" 11	7	Parr -	St. Helens	Richd. Evans and Co.	James Johnson	Labourer	-	By being run against by a railway truck above ground.	-	-	-	-
" 12	8	Lindsay	Haigh Wigan	Wigan Coal and Iron Co.	James Allcock	Braver	23	Run over on an engine plane	-	-	-	-
" 13	9	Withington Hill	Aspull, Wigan	Thomas Johnson	Joseph Jameson	Hooker-on	-	Falling into and down the pit from the surface.	-	-	-	-
" 14	10	Holland	Upholland, Wigan	Wigan Coal and Iron Co.	Peter Yates	Sinker	32	Fall of dirt from the sides -	-	1	-	-
" 15	11	Ince Moss	Ince, Wigan	Pearson and Knowles	Roger Thomas Rogers.	Collier	33	Fall of roof -	-	1	-	-
" 16	12	Ravenhead	St. Helen's	Brownlow, Haddock, and Co.	Matthew Shephard	Ditto	-	Ditto -	-	-	-	-
" 17	13	Rose Bridge	Ince, Wigan	John Grant Morris	John Seddon	Ditto	21	Ditto -	-	-	-	-
" 18	14	Haydock	St. Helen's	Richd. Evans and Co.	Michael Linnet	Carpenter	16	Falling into the pit from surface	-	-	-	-
" 19	15	Hindley	Hindley, Wigan	Wigan Coal and Iron Co.	Joseph Ellis	Ditto	51	Falling into machinery above ground	-	-	-	-
" 20	16	Rose Bridge	Ince, Wigan	John Grant Morris	Edward Low	Drawer	12	Fall of roof -	-	1	-	-
" 21	17	Crawford	Aspull, Wigan	Wigan Coal and Iron Co.	James Smith	Collier	55	Ditto -	-	1	-	-
" 22	18	Orrell	Orrell, Wigan	Wm. Hill Branker	Alice Hackett	Coal cleaner	20	From a wound on the leg by a fork above ground.	-	-	-	-
" 23	19	Crawford	Aspull, Wigan	Wigan Coal and Iron Co.	Henry Wright	Drawer	15	Being crushed between a full tub and the side.	-	-	-	-
" 24	20	St. Helen's	St. Helen's	Pilkington and Brother	Peter Massey	Ditto	14	Run over by a tram of full tubs below ground.	-	-	-	-
" 25	21	Blackleyhurst	Ditto	Samuel Stock	William Rigby	Ditto	14	Fall of roof -	-	1	-	-
" 26	22	Blackleyhurst	Ditto	Samuel Stock	Michael Ainscough	Labourer	23	Getting into the cage to descend while the engine was in motion.	-	-	-	-
" 27	23	Blackleyhurst	Ditto	Samuel Stock	John Fairclough	Collier	-	Fall of roof -	-	1	-	-
" 28	24	Blackleyhurst	Ditto	Samuel Stock	Hugh Parr	Day wage man	55	Fall of roof while drawing props -	-	1	-	-

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives Lost.			
									Explosions.	Falls of Roof.	In Shafts.	Miscellaneous.
1871.												
Mar. 1	22	Coppa	Mold -	Coppa Colliery Co. -	Patrick Henachan	Labourer -	-	Crushed by railway trucks on surface.	-	-	-	1
" 8	23	Hafod -	Hafod Ruabon -	Ruabon Colliery Co. -	Daniel Jenkins	Drawer -	15	Fall of roof	-	1	-	-
" 17	24	Haydock	St. Helen's -	Richd. Evans and Co. -	Jonn. Davies	Ditto -	13	Injuries received by trams and tubs	-	-	-	1
" 30	25	Sutton Heath	Ditto -	James Radley -	James Dunn	Sinker -	-	Fall of dirt from the ascending tub	-	-	1	-
" 31	26	Haydock	Ditto -	Richd. Evans and Co. -	Henry Hall	Ditto -	15	Fall of roof	-	1	-	-
April 10	27	Mostyn	Mostyn, Holywell.	Mostyn Colliery Co. -	Richd. Hughes	Labourer -	21	A fall of on the surface	-	-	-	1
" "	28	Queen	Haydock, St. Helen's.	Richd. Evans & Co. -	Henry Hall	Drawer -	15	Fall of roof	-	1	-	-
" 17	29	Ridney Lane	Ashton, Wigan -	Cross, Tetley, and Co. -	James Speakman	Ditto -	14	Falling into pit or shaft from part way down	-	-	1	-
" "	30	Sawmill Haigh	Haigh, Wigan -	Wigan Coal and Iron Co. -	James Hind	Painter -	34	Being caught by a revolving shaft and killed.	-	-	-	1
" 21	31	Pemberton	Pemberton, Wigan.	Jonn. Blundell -	Edward Leach	Furnace tender. -	-	Falling from part way down the pit or shaft.	-	-	1	-
" 28	32	Patchcroft	Haigh, Wigan -	Wigan Coal and Iron Co. -	Matthew Melson	Collier -	25	Fall of roof	-	1	-	-
May 14	33	South Buckley	Buckley, Mold -	South Buckley Coal Co. -	-	Ditto -	-	Ditto	-	1	-	-
" 15	34	Ewloe -	Ditto -	Ewloe Hall Coal Co. -	Joseph Edwards	-	-	Ditto	-	1	-	-
" "	35	Whiston	Whiston, Prescott	Wigan and Whiston Coal Co. -	Patrick Sheridan	Labourer -	26	Falling out of the cage while descending.	-	-	1	-
" 16	36	Hafod	Hafod, Ruabon -	Ruabon Colliery Co. -	Aaron Green	Collier -	40	Fall of roof	-	1	-	-
" 23	37	Bickershaw	Near Wigan -	Bickershaw Colliery Co. -	James Jackson	Drawer -	18	Crushed between the tub and a prop on the side.	-	-	-	1
" "	38	Mostyn -	Near Holywell -	Mostyn Colliery Co. -	Peter Parry	Coal dresser	19	Killed on the railway above ground by a coal truck.	-	-	-	-
" 25	39	Queen's Ferry	Near Flint -	Fredk. Thompson	Edward Williams	Collier -	-	Fall of roof	-	1	-	-
" 28	40	Bickershaw	Near Wigan -	Bickershaw Colliery Co. -	-	-	-	Ditto	-	1	-	-
" 30	41	Sankey Brook	Near St. Helen's	Messrs. Bramall, and Co. -	Joseph Parr	Collier -	32	Ditto	-	1	-	-
" 31	42	Tawd Vale	Near Ormskirk -	Tawd Vale Colliery Co. -	James Morris	Drawer -	13	Ditto	-	1	-	-
" 5	43	Haydock	St. Helen's -	Rich. Evans and Co. -	James Twist	Collier -	55	Ditto	-	2	-	-
" "	44	Senela Green	Ditto -	Ditto -	James Twist	Drawer -	17	Ditto	-	-	-	-
" "			Ditto	Samuel Stock -	James Speakman	Prop drawer	30	Ditto	-	1	-	-

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives Lost.			
									Explosions.	Falls of Roof.	In Shafts.	Miscellaneous.
1871. June 10	45	Black Park	Chirk, Denbighshire.	John Stott, Milne, and Co.	William Parry	Metal man	65	Fall of roof	-	1	-	-
"	46	Wern	Bagillt, Flint	David Jones	Richard Johnson	-	-	An explosion	1	-	-	-
"	47	Winstanley	Near Wigan	Meyneke Banks	John Green	Prop taker	-	Fall of roof	-	1	-	-
"	48	Hafod	Near Ruabon	Ruabon Colliery Co.	John Jones	-	-	Run over by railway trucks above ground.	-	-	-	1
"	49	Tawd Vale	Near Ormskirk	Tawd Vale Colliery Co.	Mattw. Speakman	Collier	22	Fall of coal	-	1	-	-
"	50	Hamma	Mostyn, Holywell.	Eyton and Elliott	Price Jones	Ditto	27	Crushed between a tub and the side of the road.	-	-	-	1
"	51	Bamforlory	Near Wigan	Cross Tetley	Willm. Ratcliffe	Drawer	14	While ascending the pit an empty tub was pushed in from a higher mouthing which knocked him out.	-	-	1	-
"	52	William Pit	Haigh, Wigan	Wigan Coal and Iron Co.	Henry Hough	Fireman	35	The rope slipping on a conical drum	-	-	1	-
"	53	Hafod	Near Ruabon	Ruabon Colliery Co.	Edwin Wright	Brick maker	24	Falling into machinery in a brick yard.	-	-	-	-
"	54	Bumcslowfield	Gidlow, Wigan	Wigan Coal and Iron Co.	John Foy	Banksman	52	Falling from top of head gear or pit frame.	-	-	-	1
July 1	55	Crawford	Aspull, Wigan	Ditto	John Smith	Collier	35	Fall of roof in the yard mine	-	1	-	-
"	56	Holland	Holland, Wigan	Ditto	John Whalley	Day wage man.	21	On an engine plane by the breaking of the pulley.	-	-	-	1
"	57	Victoria	Ramford, St. Helen's.	Victoria Colliery Co.	-	-	-	Ditto ditto	-	1	-	-
"	58	Blackley Hurst	Near St. Helen's	Suml. Stock	Sarah Winstanley	Coal cleaner	90	Run over above ground by a coal truck.	-	-	-	1
"	59	Standish Ground.	Near Wigan	Wigan Coal and Iron Co.	William Heaton	Collier	27	Fall of roof	-	1	-	-
"	60	Park Lane	Ditto	Mercer and Evans	Thomas Rigby	Prop taker	33	Ditto	-	1	-	-
"	61	Bamfurlory	Ashton, near Wigan.	Cross, Tetley, and Co.	James Molyneux	Ditto	41	Ditto	-	1	-	-
"	62	Broughton	Near Wrexham	Broughton Colliery Co.	Moses Morgan	Horse driver	15	Ditto	-	1	-	-
"	63	Broneved	Near Mold	Broneved Colliery Co.	James Griffiths	Collier	23	Ditto	-	1	-	-
"	64	Hindley Green	Hindley, Wigan	John Scowcroft and Co.	Lambert Heys	Ditto	28	Fall of roof, coal, and dirt	-	1	-	-

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives Lost.			
									Explosions.	Falls of Roof.	In Shafts.	Miscellaneous.
1871.												
July 25	65	Crawford	Aspull, Wigan -	Wigan Coal and Iron Co.	William Liptrot	Pony driver	19	Run over by a tram of pit boxes	-	-	-	-
" "	66	Kirkless	Ditto -	Ditto	Thomas Gallagher	Labourer -	19	Crushed between railway trucks above ground.	-	-	-	1
" "	67	Coppa -	Near Mold -	Coppa Colliery Co.	Thomas Foulkes	Collier -	35	Falling out of cage while ascending the pit.	-	-	1	-
" "	68	Prospect	Standish, Wigan	Wigan Coal and Iron Co.	Thomas Baxendale	Drawer -	14	Injured by trams and tubs below ground.	-	-	-	1
" "	69	New Boston	Haydock, St. Helen's.	Richd. Evans and Co.	Thomas Cooke	Taker off on the top of an engine plane.	11	Ditto -	-	-	-	1
" "	70	Pewfall	Ashton, St. Helen's.	Ditto -	John Hardman	Collier -	29	Fall of roof -	-	1	-	-
" "	71	Ditto	Ditto -	Ditto -	Thomas Twist	Ditto -	25	Ditto -	-	1	-	-
Aug. 2	72	Bumclow Field	Gidlow, Wigan -	Wigan Coal and Iron Co.	James Twist	Ditto -	28	Ditto -	-	1	-	-
" 10	73	Peaseley Cross	Near St. Helen's	Messrs. Bournes and Co.	William Cooper	Miner -	37	An explosion of gun cotton -	1	-	-	-
" "	74	Ince Hall	Ince, Wigan -	Ince Hall Colliery Co.	Aaron Woods	Pony driver	15	From being crushed between trams and tubs.	-	-	-	1
" "	75	Garswood Park	Ashton, St. Helen's.	Brownlow, Haddock, and Co.	John Holland	Hooker-on -	16	Fall of roof -	-	1	-	-
" "	76	Sankey Brook	St. Helen's	Messrs. Bramall and Co.	Rich. Roper	Labourer -	56	Crushed between the buffers of a coal truck.	-	-	-	1
" "	77	Meases	Wigan -	Charles Turner -	Robt. Margerson	Collier -	20	Fall of roof -	-	1	-	-
" "	78	Brynnally	Wrexham -	Thomas Clayton -	John Doolan	Sinker -	33	Falling in shaft from a scaffold	-	1	1	-
					James Evans Davies	Ditto -	15	Fall of coal -	-	-	-	-
					No. on Plan.							
					Wm. Finch	Collier -	51					
					John Finch, jr.	Drawer -	22					
					John Finch	Ditto -	19					
					Thomas Finch	Collier -	23					
					Geo. Parkinson	Drawer -	22	An explosion -	70			
					Hy. Radcliffe	Ditto -	22					
					Joseph Finch	Collier -	25					
					James Jones	Drawer -	20					
					John Walsh	Ditto -	17					
Sept. 6	79	Ince Moss	Ince, Wigan -	Pearson and Knowles								

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives Lost.			
									Explosions.	Falls of Roof.	In Shafts.	Miscellaneous.
1871.												
Sept. 16	82	Westminster	Near Wrexham	Westminster Colliery Co.	Robert Jones	Door boy or trapper.	12	Injured by a rope below ground	-	-	-	1
"	17	Gardden Lodge	Near Ruabon	Garden Lodge Colliery Co.	William Williams	Collier	29	An explosion	1	-	-	-
"	20	Ince Moss	Ince, Wigan	Pearson and Knowles	Causing the death of five persons (all men).		-	Second explosion at Ince Moss	5	-	-	-
"	27	Morris Lane	Haigh, Wigan	Wigan Coal and Iron Co.	John Ellison	Collier	19	Fall of roof	-	1	-	-
"	30	Bickershaw	Near Wigan	Ackers, Whitley, and Co.	Joseph Heyes	Laborer	13	Injured by trams and tubs	-	-	-	-
Oct. 2	87	Sankey Brook	Near St. Helen's	Henry Bramall	Henry Mullington	Sinker	26	The rope got out of the pulley and he fell down the pit.	-	-	1	-
"	3	Coppa	-	Coppa Colliery Co.	John Powell	Collier	30	The cage got out of the guides and threw him out when half-way down the pit.	-	-	1	-
"	5	Rron	Near Wrexham	Maurice and Lowe	Peter Morris	Ditto	26	Fall of coal	-	1	-	-
"	"	Swan Lane	Near Hindley, Wigan.	Edward Johnson	James Berry	Laborer	53	Injured by trams and tubs above ground.	-	-	-	1
"	7	Plaakynaston	Near Ruabon	Plaakynaston Co.	James Hughes	Collier	54	A full tub running down an inclined plane.	-	-	-	1
"	17	Peaseley Cross	Near St. Helen's	Bournes and Robinson	James Burrows	Ditto	45	Suffocation by gas from town sewers	-	-	-	1
"	20	Brynn Hall	Near Wigan	Messrs. Crippin and Son	Thomas Dixon	Fireman	45	Fall of roof while getting up floor in the	-	1	-	-
"	"	Mains	Ashton, Wigan	Cross, Tetley, and Co.	Jacob Mather	Sinker	23	Falling out of the cage while ascending.	-	-	1	-
"	21	Park Lane	Near Wigan	Mercer and Evans	James Molyneux	Drawer	17	Fall of roof	-	1	-	-
"	16	Ladies Lane	Hindley, Wigan	Thomas Gidlow	Thomas Aldred	Collier	40	Having been crushed between pit boxes.	-	-	-	1
Nov. 1	97	Hindley Hall	Hindley, Wigan	Pearson and Knowles	John Makinson	Day labourer	63	Fall of roof	-	1	-	-
"	6	Black Park	Chirk, Denbighshire.	John Stott, Milne, and Co.	Robert Jones	Collier	27	Ditto	-	1	-	-
"	8	Bickershaw	Bickershaw, Wigan.	Ackers, Whitley, and Co.	John Charles Cox	Drawer	17	Ditto	-	1	-	-

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives Lost.				
									Explosions.	Falls of Roof.	In Shafts.	Miscellaneous.	Above ground.
1871.													
Nov. 15	100	Hindley Green	Hindley Green, Wigan.	John Scowcroft and Co.	Peter Holt	Metal man	48	An explosion of gas	6	-	-	-	-
"	"	"	"		James Bullough	Ditto	50		-	-	-	-	-
"	"	"	"		Walter Blythe	Ditto	50		-	-	-	-	-
"	"	"	"		John Green	Collier	24		-	-	-	-	-
"	101	Strangeways Hall.	Hindley, Wigan	William Heyes	George Counturn	Ditto	24	Falling from part way down the pit	-	-	1	-	-
"	102	Queen's Ferry	Queen's Ferry, Flint.		Thomas Whittle	Drawer	12		-	-	-	-	-
Dec. 1	103	Park Lane	Park Lane, Wigan.	Fredk. Thompson	Edw. McMahon	Carpenter	40	Falling into water below ground	-	-	-	1	-
"	2	Ewloe Hall	Buckley, Mold	Mercer and Evans	Joseph Jones	Drawer	17	Fall of coal	-	1	-	-	-
"	5	Garswood Park	St. Helen's	Brownlow and Brother	Benj. Bradshaw	Collier	38	Crushed between coal trucks above ground.	-	-	-	-	1
"	16	New Boston	Haydock, St. Helen's.		Edward Price	Underlooker	-	Crushed by pit boxes below ground	-	-	-	1	-
"	"	Rose Bridge	Ince, Wigan	Richard Evans and Co.	John Holding	Hooker-on	15	Fall of roof	-	1	-	-	-
"	107	"	"	John Grant Morris	James Harrison	Collier	45	Injured by a railway truck above ground.	-	-	-	-	1
"	18	Mostyn	Mostyn, Holywell.	Mostyn Colliery Co.	Charles Rigby	Labourer	70	Fall of roof	-	1	-	-	-
"	21	City of Wardle	St. Helen's	George A. Bates	John Elias Hughes	Collier	35	The descending tub striking him on the head.	-	-	-	1	-
"	23	Rose Bridge	Ince, St. Helen's	John Grant Morris	William Glover	Hooker	57	Fall of roof	-	1	-	-	-
"	111	Hindley Fields	Hindley, Wigan	Messrs. Lees and Norris	George Bridgeworth	Prop taker	43	On an inclined plane by a tub	-	-	-	1	-
					Bryan Tickle	Fireman	56	Total	84	57	15	21	17

Mr. Evans' Report.

REPORT ON THE INSPECTION OF COAL MINES AND MINES OF IRONSTONE OF THE COAL MEASURES WORKED IN CONNEXION WITH COAL, &c., IN THE MIDLAND DISTRICT, for the year ended 31st December 1871.—By THOMAS EVANS, Esq., F.G.S.

SIR, I HAVE the honour of submitting to you my annual report on the working of the several Acts of Parliament for the regulation and inspection of mines.

Field Head House, Belper,
1st March 1872.

It is my painful duty to state that, although the number of separate accidents in the district is slightly below the average of past years, still the attendant loss of life is considerably in excess of the usual number. This increase is to be attributed almost entirely to the very severe explosions which occurred at Renishaw Park, Norwood, and Tapton Collieries. The number of deaths from all other classes of accidents amounted to 51 only against 55, the average of the preceding four years.

The computed number of persons employed was 31,000 and the coal raised 9,250,000 tons. 56 separate fatal accidents occurred, resulting in the loss of 93 lives. The number of tons raised for each life lost was 99,494. By reference to Table No. 1. accompanying this report, it will be seen that the quantity of coal produced in this district is more than double that produced 15 years ago, and necessarily the increase in the number of persons employed must have almost kept pace with the increase of the production.

In Great Britain the quantity of coal raised during the year was 117,439,251 and the loss of life 1,075. This gives 109,246 tons raised for each life lost as the average against 99,494 tons in this district. The following table shows the same comparison for the years 1868, 1869, 1870, and 1871:—

Date.	Tons of Coal raised.		Deaths.		Tons of Coal raised per Death.	
	In Great Britain.	In the Midland District.	In Great Britain.	In the Midland District.	In Great Britain.	In the Midland District.
1868 -	104,566,959	7,699,265	1,011	60	103,429	128,321
1869 -	108,003,482	8,100,000	1,116	78	96,777	103,846
1870 -	112,875,525	8,366,000	991	50	113,900	167,320
1871 -	117,439,251	9,252,900	1,075	93	109,246	99,494

Early in the month of January I sent to each colliery owner or manager a letter requesting them to furnish me with a return of the quantity of coal raised and the number of persons employed. In most cases these returns were readily supplied, but in some few instances I had to compute the numbers. The total, however, I think may be relied on as sufficiently correct for the purpose intended. Under the provisions of the present Acts it is optional whether these returns are made or not; but I am glad to see that in the 44th section of the bill now before Parliament it is proposed that the owner or agent "shall send to the Secretary of State a correct return, specifying, with respect to the "year ending on the preceding 31st day of December, the average daily number of "persons between the ages of 10 and 13 years, and 13 and 16 years, and above the age "of 16 years employed underground, and of the women, young persons, and children to "whom the Workshop Acts, 1867-1871, are applied by this Act, and the quantity of "coal or other material wrought in such mine."

One death only was reported as having happened in the ironstone mines of the district, and that was caused by an explosion of gas at the Hawkesbury Company's pits, near Coventry. I made an examination of the works and was present at the coroner's inquiry.

From the evidence given it was quite clear that neither the underviewer nor his deputy had made an examination of the workings on the morning of the explosion before the men went in. If they had done so, the gas would have been found and the men prevented from going in until the danger had been removed. The ventilation was insufficient to comply with the first general rule, so, with your permission, the manager, Mr. Oliver, and the underviewer Lawson, were summoned before the magistrates, who imposed penalties for violation of general and special rules.

As the new Mines Act is intended to include all ironstone mines and clay mines of the coal measures the future returns of accidents will be more trustworthy than those hitherto furnished, at least for this district, there being no possibility of doubt as to the interpretation of the clause in the new Act.

The following are the Tables and Summaries generally given in my Reports:—

TABLE No. 1.

TABLE showing the Number of Deaths, the Coal raised, and the Number of Tons of Coal raised for each Death, during the 16 years ended 31st December 1871.

Dates.	Explosions of Gas.	Falls of Roof.	In Shafts.	Crushed by Tube, and Miscellaneous Accidents.	Inundation of Water.	Boilers bursting.	Total.	Tons of Coal raised.	Tons of Coal raised for each Death.
1856	3	21	16	6	—	—	46	4,500,000	97,000
1857	15	14	6	20	—	—	55	4,750,000	86,000
1858	—	16	16	10	—	—	42	5,060,000	121,000
1859	2	18	13	7	—	—	40	5,460,000	136,500
1860	3	21	13	13	—	—	50	6,215,000	124,000
1861	3	21	15	7	23	—	69	6,503,319	94,000
1862	2	25	4	12	—	—	43	6,647,000	154,000
1863	4	26	9	8	5	—	52	7,000,000	134,000
1864	11	30	9	16	—	—	66	7,300,000	110,000
1865	9	36	13	24	—	—	82	7,575,000	92,383
1866	7	26	6	19	—	—	58	7,600,000	131,034
1867	4	25	11	24	—	—	64	7,600,000	118,750
1868	1	24	9	26	—	—	60	7,699,000	128,317
1869	6	31	12	21	4	4	78	8,100,000	103,846
1870	2	22	6	19	—	1	50	8,366,000	167,320
1871	42	31	5	15	—	—	93	9,252,900	99,494

TABLE No. 2.

DEATHS in the separate Counties of Derby, Nottingham, Leicester, and Warwick during the years 1869, 1870, and 1871, and Tons of Coal raised per life lost.

Counties.	Persons employed.			Deaths.			Coal worked.			Tons of Coal raised per Life lost.		
	1869.	1870.	1871.	1869.	1870.	1871.	1869.	1870.	1871.	1869.	1870.	1871.
Derbyshire	16,300	16,405	18,000	50	27	74	5,092,000	5,102,267	5,360,000	101,840	188,973	72,432
Nottingham	5,910	6,630	6,991	14	9	7	1,660,000	2,017,372	2,469,400	118,571	224,152	352,771
Leicester	3,100	2,737	2,961	9	7	7	650,000	647,341	699,900	72,222	92,477	99,986
Warwick	3,190	3,028	3,099	5	7	5	698,000	599,120	723,600	139,600	85,589	144,720
Total	28,500	28,800	31,051	78	50	93	8,100,000	8,366,100	9,252,900	103,846	167,322	99,494

REPORTS OF INSPECTORS OF MINES.

TABLE No. 3.

SUMMARY of separate Colliery Accidents in the Midland District during the years 1867, 1868, 1869, 1870, and 1871.

	1867.	1868.	1869.	1870.	1871.
Explosions of firedamp - - - -	2	1	5	1	5
Falls of roof - - - - -	25	24	31	22	31
Shafts - - - - -	11	9	11	6	5
Miscellaneous - - - - -	21	24	23	18	15
Total accidents - - -	59	58	70	47	56

SUMMARY of LIVES LOST BY THE ACCIDENTS.

Explosions of firedamp - - - -	4	1	6	2	42
Falls of roof - - - - -	25	24	31	22	31
Shafts - - - - -	11	9	12	6	5
Miscellaneous - - - - -	24	26	29	20	15
Total deaths - - - - -	64	60	78	50	93

Shafts.

Falling from surface and part way down -	1	5	6	5	4
Things falling from surface - - - -	2	—	2	1	—
" " part way down - - - - -	1	1	1	—	—
Ropes and chains breaking - - - - -	—	1	—	—	—
Whilst ascending and descending - - -	5	1	1	—	—
Explosion of powder - - - - -	—	1	—	—	—
Overwinding - - - - -	1	—	—	—	—
Suffocated in shaft - - - - -	1	—	—	—	—
Fell under carriage shaft bottom - - -	—	—	1	—	—
Jammed against shaft side, pumps giving way -	—	—	1	—	—
Drowned in sump - - - - -	—	—	—	—	1
Total - - - - -	11	9	12	6	5

Miscellaneous.

Explosions of gunpowder - - - -	5	8	1	2	2
Suffocation by gases - - - - -	1	2	—	5	—
On incline planes - - - - -	2	7	6	3	3
By tubs and trams - - - - -	12	5	7	3	7
Boilers bursting - - - - -	3	—	4	1	—
Machinery underground - - - - -	—	—	—	2	—
Machinery (on surface) - - - - -	1	1	3	4	1
Run over " " - - - - -	—	3	2	—	1
Kicked by a horse - - - - -	—	—	1	—	—
Inundation - - - - -	—	—	4	—	—
Drawn on to drum by a rope of an incline -	—	—	1	—	—
Fall from building - - - - -	—	—	—	—	1
Total - - - - -	24	26	29	20	15

TABLE No. 4.

TOTAL Number of DEATHS in the different COLLIERIES in the years 1865, 1866, 1867, 1868, 1869, 1870, and 1871.

Name of Colliery.	Owners' Name.	Total Deaths in 7 years.
Clay Cross - - - - -	Sir William Jackson, & Co. - - - -	43
Butterley Collieries - - - - -	Butterley Iron and Coal Company - -	41
Staveley Collieries - - - - -	Staveley Coal and Iron Company - -	34
Renishaw Park, &c. - - - - -	J. and G. Wells - - - - -	32
Swannington and Coleorton - - - - -	Walker and Worswick - - - - -	19
Cinder Hill and Newcastle - - - - -	Wright and Co. - - - - -	17

Name of Colliery.	Owners' Name.	Total Deaths in 7 years.
Nesfield, Sheepbridge, &c.	Sheepbridge Coal and Iron Company	17
High Park, Watnal, Eastwood	Barber, Walker, & Co.	16
Moirs, Church Gresley, Oakthorpe	E. Abney Hastings	12
Bretby	The Earl of Chesterfield	12
Swadlincote, Cadley Hill	Hall and Boardman	10
Shipley	E. M. Mundy	10
Hawkesbury	J. Darlington & Co.	10
Whitwick	W. Whetstone	10
Ibstock	J. & N. Nadin & Co.	9
Stanton	G. R. Stevenson & Co.	8
Snibston	James Oakes & Co.	8
Riddings	Jeffcock and Dunn	8
Birley Vale	Firmstone and Co.	8
Glascoate	Tapton Coal Company, Limited	8
Tapton	Pilsley Colliery Co.	7
Alma, Pilsley	Wingerworth Coal Company	6
Wingerworth, Boythorpe	— Troughton	5
Victoria	Eastwood, Swingler, & Co.	5
Molyneux	W. P. Morewood	5
Swanwick	Shirland Colliery Co.	5
Shirland	Coke & Co.	5
Pinxton	Executors of Court Greville	5
Granville	Devonshire Silkstone Colliery Company	5
Devonshire Silkstone	William Worswick	5
Annesley	Stanton Iron Company	5
Butcher Wood, &c.	Gresley Wood Colliery Company	4
Gresley Wood	E. Chambers	4
Tibshelf and Blackwall	C. Seeley & Co.	4
Tibshelf and New Birch Wood	E. Ellis & Co.	4
Hucknall Torkard	Barnes Brothers	4
Grassmoor	W. D. Lowe	4
Denby	Shireoaks Colliery Company, Limited	4
Shireoaks	J. B. Wilson & Co.	4
Oakerthorpe	Addenbrooke and Pidcock	3
Charity	C. E. Appleby	3
Renishaw	Perrins & Harrison	3
Wilnecote	G. and W. H. Dawes	2
Denby	Rangeley	2
Unstone	Nowell & Son	2
Haunch Wood	Skegby Coal, Lime, & Brick Company, Limited	2
Skegby	Pooley Hall Colliery Company, Limited	2
Pooley Hall	Nock Brothers	2
Tame Valley	Digby Colliery Company	2
Digby	W. S. Dugdale	2
Baddealey	John Stapleton	2
New Whittington	Whittington Colliery Company, Limited	2
Foxley Oaks	Newbold Iron Company	2
Newbold	R. W. Jackson, M.P.	2
Brampton	Booker & Co.	1
Woodhouse	Nuneaton New Colliery Company, Limited	1
Nuneaton New Colliery	R. W. Jackson, M.P.	1
Alton	William Bainbridge & Co.	1
West Staveley	Executors of Richard Arkwright	1
Sutton	E. Wilson	1
Exhall	John Rhode	1
Plumley	Buxton Lime Company	1
Axedge	Luke Needham	1
Boythorpe	Bennett & Sons	1
Birch Vale	R. Swan	1
Hill Top	F. Newdegate	1
West Hallam	Rutland Colliery Company	1
Rutland	P. Hicks & Co.	1
Giltbrook	W. Gleadow	1
Bagworth	Smith and Shepherd	1
Danesmoor	J. Woolley	1
Stoneyford	Executors of J. Rae	1
Kilburn	J. Sayer	1
Bridgehouse	G. Andrews and Company	1
Compstall	Saul Isaacs	1
Clifton	Church and Marples	1
Old Swadlincote	Galloway & Co.	1
Owlcote		
	Total	478

REPORTS OF INSPECTORS OF MINES.

TABLE No. 5.

SHOWING the Deaths that have taken place by falls of roof at the under-mentioned Collieries in the years 1867-71.

Name of Colliery.	Owner's Name.	Deaths.					
		1867.	1868.	1869.	1870.	1871.	Total.
Clay Cross - -	Sir William Jackson, Bart., & Co. -	3	3	2	4	3	15
Butterley - -	Butterley Iron and Coal Company -	6	1	2	1	3	13
Staveley - -	Staveley Coal and Iron Company -	3	3	1	1	3	11
Swannington - -	Walker and Worswick -	—	3	2	1	1	7
High Park, Eastwood, &c. -	Barber, Walker, & Co. -	—	3	2	—	1	6
Sheepbridge - -	Sheepbridge Coal & Iron Co. -	—	3	1	1	—	5
Cinderhill, Newcastle, &c. -	J. Wright -	2	—	—	1	1	4
Swadlincote - -	Hall and Boardman -	1	—	2	—	1	4
Shipley - -	E. M. Mundy -	—	—	3	—	1	4
Riddings - -	James Oakes & Co. -	—	—	2	1	—	3
Stanton - -	E. Nadin & Co. -	2	—	—	—	1	3
Nailstone - -	J. Ellis and Co. -	2	—	—	—	—	2
Glascote - -	Firmstone & Co. -	1	—	—	1	1	3
Pinxton - -	Coke & Co. -	1	—	1	—	1	3
Hucknall Torkard -	E. Ellis & Co. -	—	1	1	—	—	2
Whitwick - -	W. Whetstone -	—	1	—	1	4	6
Moirs, Oakthorpe, &c. -	E. A. Hastings -	—	1	1	—	—	2
Shireoaks - -	Shireoaks Colliery Company -	—	1	1	—	—	2
Bretby - -	Earl of Chesterfield -	—	—	1	1	1	3
Butcher Wood, Silverhill. -	Stanton Iron Company -	—	—	—	2	1	3
Molyneux - -	Eastwood and Swingler -	1	—	—	—	—	1
Haunch Wood - -	Nowell & Son -	1	—	—	—	—	1
Shirland - -	H. Baillie -	1	—	—	—	1	2
Hill Top - -	Wm. Swan -	1	—	—	—	—	1
Victoria - -	Troughton -	—	1	—	—	—	1
Charity - -	Addenbrooke & Pidcock -	—	1	—	—	—	1
Newbold - -	C. H. Plevins -	—	1	—	—	—	1
Gronville - -	Exors. of Court Grenville -	—	1	—	—	1	2
Dronfield - -	Booker -	—	—	1	—	—	1
Birch Vale - -	Bennett & Sons -	—	—	1	—	—	1
Whittington - -	Whittington Colliery Company -	—	—	1	—	—	1
Grassmoor - -	Barnes, Brothers -	—	—	1	—	—	1
Hawkesbury - -	James Darlington & Co. -	—	—	1	—	1	2
Renishaw Park, &c. -	J. & G. Wells -	—	—	1	—	—	1
Renishaw - -	C. E. Appleby -	—	—	1	—	—	1
Birley Vale - -	Jeffcock & Dunn -	—	—	1	—	1	2
Tame Valley - -	E. N. Nock -	—	—	1	—	—	1
Old Swadlincote -	Church and Maples -	—	—	—	1	—	1
Swanwick - -	W. P. Morewood -	—	—	—	1	—	1
Tibshelf & Blackwall -	E. Chambers -	—	—	—	1	—	1
Annesley - -	William Worswick -	—	—	—	1	—	1
Devonshire Silkstone -	Devonshire Silkstone Colliery Co. -	—	—	—	1	1	2
Snibston - -	J. R. Stevenson & Co. -	—	—	—	1	—	1
Wilnecote - -	Harris & Perrins -	—	—	—	1	—	1
Oakerthorpe - -	J. B. Wilson & Co. -	—	—	—	—	1	1
Newbold - -	Newbold Iron Co. -	—	—	—	—	1	1
Denby - -	W. D. Lowe -	—	—	—	—	1	1
Total -		25	24	31	22	31	133

Explosions
of Gas.

Five separate explosions of gas, attended with fatal results, have taken place during the past year, and 42 lives have been lost thereby. I purpose fully to describe each of these explosions in the sequel.

Falls of
Roof.

The deaths from "falls of roof" and "sides of working places," amounting to 31, are nine in excess of the previous year, and rather above the average of the last 10 years. This is by far the most productive source of accident, and although unfortunately surpassed in this particular year by explosions of gas in this district, yet it will be found on reference to the reports of past 16 years that it is credited with a total of 387 deaths against 114 by explosions. Can nothing be done to reduce this frightful loss of life? The only remedy I can suggest is the more frequent examination of the stalls by the under-viewers and deputies, who would then have more frequent opportunities of seeing that timber was set where required. This their greater experience would enable them to judge of better, at any rate, than most of the stallmen. The pit timber should be placed at

convenient distances from the "working faces," and always in sufficient quantity, so that there may be no excuse on the ground of difficulty in getting a prop whenever required. The men, however, to some extent must always look to themselves for their own safety, for it is evident that they cannot all be under continuous supervision. They ought for ever to be on the alert with regard to the roof, and when doubtful of any particular part to set timber instead of, as is too often the case, letting it alone. Many of these accidents also arise from neglecting to set "sprags" at proper distances to support the coal during the operation of "holing." On several occasions during the past year, while going through the workings, I have seen colliers at work under the coal, while the sprags on each side have been too far apart to ensure safety. If men thus persist in violating the rules, their deaths from this cause will continue to increase. If the colliery owners appoint proper and sufficient men to make regular examinations of the working places, and supply each place with sufficient quantity of timber ready to hand, I think they have done all they can do, and that they have a right to expect reasonable care and caution on the part of those most directly interested, whose lives may pay the penalty of their neglect.

Deaths from shaft accidents numbered five during the year, the average for the past 16 years being 10. On the whole there has been a tolerably regular diminution in the number of shaft accidents during those years, consequent, I believe, on the improvement of the winding machinery, on the introduction and proper "fitting-up" of guides, on the adoption of self-acting gates, and perhaps on the more strict enforcement of the limit of the number allowed to pass through the shafts at one time. Shafts.

One man fell into the sump of a shaft just finished sinking before the proper platform had been put in, and was drowned; another fell from a mouthing part way down; another, a bricklayer, attempted to get out of the cage just as it started from the top, and was killed; and a furnace-man, while attempting to get out at a mouthing on the way to the furnace, slipped and fell to the bottom. Another death, which I have been obliged to class under this head, occurred at Wilnecote, and was in reality the result of natural causes, the man having been seized with a fit while ascending the shaft. It is very satisfactory to be able to state that, although more than 25,000 men pass through the shafts twice each day, there has been no single case of overwinding. Much credit is therefore due to those in charge of the machinery, and to none more than to the enginemmen themselves, as winding engines are not self-acting; their proper guidance depending on the vigilance and nerve of the men actually working them.

There were two deaths from explosions of gunpowder. One (No. 5 in the schedule) Explosions of powder. occurred at Swannington Colliery, near Ashby-de-la-Zouch. It appeared from the evidence given at the inquest that the deceased, Thomas Webster, was in the habit of keeping a considerable quantity of powder in the cabin near the shaft-bottom, and on the morning of the 5th of January, while he was in the act of filling a smaller can from the large one in which he kept the supply, he snuffed his candle with his fingers and allowed the snuff to fall among some spilt powder, and immediately the whole in both tins exploded and killed him. Keeping so large a quantity of powder underground is a direct violation of the special rules of the colliery, which distinctly state that powder for one days' use only shall be taken into the mine at once, and then only in a safe and proper tin with close fitting top.

The second explosion took place at the Ammington Colliery, near Tamworth. The deceased, William Aikin, while in the act of charging a shot hole, incautiously placed his light too near the powder (about 3 lbs.) when it exploded and killed him.

If the new Act now under consideration become law, such accidents as these just described cannot well take place, one general rule being that no powder shall be taken in the mines except in cartridges. There is another most excellent proposed rule to the effect that no iron pricker shall be allowed in the mines. This I am confident will diminish the number of deaths from this class of accident. Blasting in mines should always be done by men of experience, as there are so many different points to be attended to to insure safety; as, for instance, the use of a proper length of fuze to give the man time to get beyond reach of the explosion. The practice of drilling out mis-fired shots also is attended with very great danger, and ought not under any circumstances to be allowed. A careful examination of the roof should be made after each shot, as in many cases the shot renders it dangerous.

Ten persons lost their lives by being crushed between tubs or trams and the sides, or by being run over on inclined planes or otherwise. The sufferers from this class of accident are mostly lads; of the 10 above mentioned seven having been under 16 years of age, one 18, one 26, and one 45 years of age. Crushed by trams and tubs.

The introduction of hauling machinery has increased the danger on the roads underground, and it is proposed by the new Act to provide against this by having refuge holes

at the side at intervals not exceeding 50 yards. Where practicable, travelling on incline planes or planes worked by machinery should be avoided, by making other roads parallel to such planes or otherwise, as most convenient under the circumstances. The long chains by which horses were fastened to the trams are being superseded by shafts or "limbers," which are much safer; for with the former, when coming down a slight inclination, the horse had no control over the load, whereas with the latter he would have full control at least to the extent of his power.

Miscellaneous on the surface.

Three deaths are classed under this head. One man, a mason, was killed by falling off the boiler brickwork; one was run over by a railway waggon near a colliery and killed, and the third met his death through a derangement of machinery.

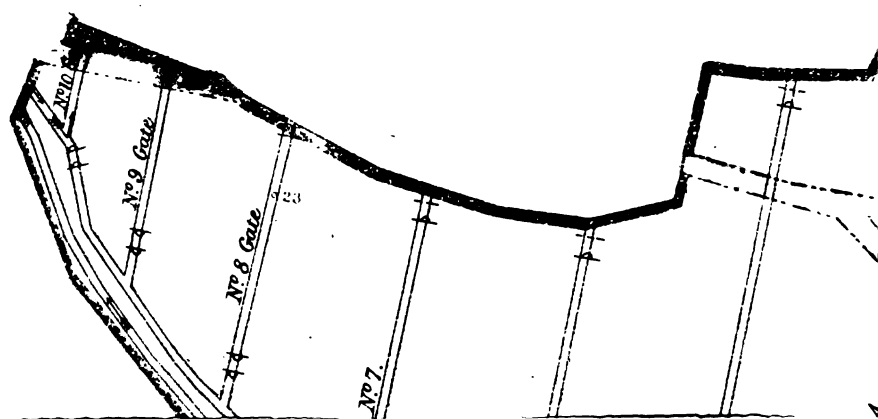
Boiler explosions.

A most violent boiler explosion took place at Netherseal Colliery, a new winning near Burton-on-Trent, on the 4th September, and although, fortunately, no death resulted, yet, as several persons were more or less seriously injured, I thought it desirable to obtain the opinion of some gentleman of unquestionable authority on boiler explosions. Accordingly I called in Mr. Longridge, of Manchester, to examine it, and I cannot do better than give you his account of his inspection. He says: "The boiler was the fifth in a range of six and was about four years old, cylindrical, with hemispherical ends, 40 feet long by 5 feet in diameter, made of three-eighth inch plates, which on examination I found to be of an inferior quality. The workmanship was good and the plates little affected by corrosion. Some time previous the boiler had undergone repairs on account of fractures in two of the plates over the fire, but at the time of the explosion there was no defect to cause the least apprehension. The boiler was provided with two lever safety valves, 4 inches in diameter, loaded to 50 lbs. per square inch. It had also a float water gauge, a pressure gauge, and other usual fittings. The water with which it was supplied was drawn from the pit and contained a large amount of sulphate and carbonate of lime, magnesia, chloride of sodium, and other salts, and being heated from the exhaust steam from the engines, the tallow used for the cylinder thus mixed with these salts, forming a soft greasy deposit, which having accumulated on the second plate from the front end, directly over the fire, the plate became red hot, and yielding to the pressure, a piece about 60 square inches in area was blown out. The boiler then rising from its seating turned a complete somersault, and the front end coming in contact with the top of the chimney, was torn off and fell at a distance of about 150 yards. The remainder of the boiler, impelled by the force of the escaping steam, was then seen to rise high in the air, taking a flight in the opposite direction, and on striking the ground about 200 yards from its original position, broke into five pieces. The cause of the explosion was overheating of the plates over the fire in consequence of deposit."

Accident No. 4 in the Schedule

was an explosion of gas, and took place in the "Blackshale" workings at Renishaw Park Colliery, belonging to Messrs. J. and G. Wells, on Tuesday, January 10th. On the evening of this day, some men were engaged in the main intake airway, No. 1 pit, blasting down the roof to make sufficient height for the horses to go into the workings. Other men were at different parts of the pits (No. 1 and No. 2) repairing the roads, and a few also were getting coal. There are two shafts sunk to the Blackshale coal, one on the low level, which is the downcast, and the other about 600 yards to the rise, which is the upcast. The air is split at the bottom of the downcast, one portion going north and the other south. The latter passes along the level, where the explosion occurred, to the boundary, up an incline to the working faces, along the faces to the north side of the upcast into the low level of No. 2 pit, along the low level southward again to the boundary, up the farthest gate road to the face, back along these faces to a point opposite the upcast where it meets the north return and thence to the upcast. If the ventilation of this colliery had been properly distributed a large proportion of the 26 lives lost would have been spared even if the explosion had taken place, but it is quite probable that it would not have occurred at all under those circumstances. No. 2 pit should have had a distinct split of air taken straight from the bottom of the downcast and this should have been split again on reaching No. 2 pit workings. Had this been the case the explosion in No. 1 could not have affected the men in No. 2, whereas, as it was, many of them were suffocated. The most simple principles of ventilation appear not to have been understood or, if understood, were not carried out. With reference to the former ventilation of this colliery, I beg respectfully to refer you to my Report for the year 1865 in which, while commenting on a small explosion in that year, I said that I

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had frequently pointed out the necessity of an alteration in the system of ventilation, and had also complained of the want of discipline underground.

I append to this report a copy of the most important evidence taken at the inquest, and a copy of the plan of the colliery, and would here remark that the manager admitted in his examination that he seldom went into the mines, but left the distribution of the air and the safety of those employed to the care and judgment of the underviewer, Samuel Hardwick, a respectable working man, who, however, in his evidence told the jury, "I manage the distribution of the air. I have not full control to drive airways " or do all that is necessary for the ventilation of the colliery."

Hardwick is assisted by his brother, a deputy, who keeps a public house not far from the works. The furnace man, William Barker, stated in his evidence that he did not go to his work that night, alleging that he was not well enough, but he admitted that he had been at the deputy's house (the Rose and Crown) drinking beer.

The following is the principal part of the evidence taken before C. S. B. Busby, Esq., one of the coroners for the county of Derby:—

Mr. Joseph Wells said: "I live at Eckington, and am one of the proprietors of the colliery where the accident happened. They are called No. 1 and No. 2 Silkstone pits—Renishaw Park Colliery, in the parish of Eckington. The plan on the wall shows that part of the workings where the men were found. The rules produced are those of the colliery. They were not fiery pits. They are under the rules of fiery pits. They are wholly worked with lamps. Samuel Hardwick is the underground steward who superintends the colliery. Francis Clarke, who is dead, was deputy in the night time, and Thomas Hardwick was deputy in the day time, of the part of No. 1 pit affected by the accident. Thomas Hutchby was night deputy on the north side of No. 2 pit, and John Hardwick on the south side. About 400 worked in the two pits in the day time. There were 77 in that night. I can't say exactly when I was last in the pit. I don't go through the pits regularly. That is Samuel Hardwick's department. I think it was in November when I was in No. 1 pit. I can't recollect when I was in No. 2 pit."

By Mr. Evans: "The lamps are locked. We have one lamp-man for the night and another for the day, William Keeton and John Brunt. They take their duties alternately. Brunt is not the regular lamp-man. He was only engaged temporarily. Keeton was on duty on the night of the explosion. It is his duty to lock the lamps before they go into the pit. The men who blow have each two lamps, a glass lamp and a Davy lamp, all the other men have only one lamp each. We have 'Georgy' lamps and Davy lamps. The shot-firers have Davy lamps. The men have principally the 'clanny' lamp (a glass lamp). Joseph Hardwick and Francis Clarke have each a key. If men's lamps go out they have to go to the deputies who light them at the bottom of the shaft. (Witness then proceeded to describe the ventilation.) The air in down-cast shaft No. 1 is divided into two courses, part going to the south and part to the north. The north side was in no way affected by the explosion. The air goes round the north and up No. 2, which is an upcast shaft. The air on the south side ventilates the dip headings, travels on the two south levels to the end of the level, and then goes up the jenny-gate (or incline). There are two air-doors at the top of the incline to direct the air into the working faces of the coal on the extreme south of the mine. The air is then brought down a dip-gate and returns by the face of the workings. It travels the whole of working 'benk' faces, and goes to a heading which communicates with No. 2 pit level. Then the air goes along the deep level of No. 2 pit to the extremity of the workings on the south side of No. 2. It then returns on the 'benk' faces to No. 1 gate, down which it goes to the cupola. It travels about 2,000 yards from the starting point to the cupola. The coal is three feet thick along the working faces. The gobbing is eight feet from the face on the average. Supposing the working faces to be clear, there would be 29 feet area of airway. Eight inches of floor is taken up nearly all the way along. Practically there is 29 feet of airway all along. If there was any coal down it would interfere with the area of the airway. The air that goes through No. 1 is the only air that supplies the south side of No. 2. The bodies of Martin, Wood, Hall, Lowe, and Briggs were found at the bottom of No. 4 gate of No. 1 pit; Aloock and Clarke at the bottom of No. 5 gate. Savage, Layking, and Watson at the bottom of No. 7 gate, within it; John Bolsover at the end of the south level; Potas, 300 yards up the incline road or jenny gate; Billam was found at the back of the drum in the jenny-gate; Mark Barber, Rhodes, and Richardson were found on the level leading south from the top of the jenny gate; David Wainwright was found at the bottom of the dip gate; George Webster, Arthur Ellis, and Cutley were found in the benk. Thomas Goodwin, who died yesterday, was found at the bottom of No. 4 gate in No. 1 pit. All the above were in No. 1 pit. On the level in No. 2, Goldsworthy was found suffocated. In No. 8 gate Thomas

Lloyd was brought out of the pit alive, but afterwards died from suffocation. In No. 3 gate were found Breeze, John Thorpe, and Webster, all dead from suffocation. In No. 1 gate Pearce was found dead. These six were found in No. 2 pit. Lowe, Briggs, Martin, Wood, Hall, Alcock, Clarke (fireman), Bolsover, and Goodwin were the only men burnt. All the rest were suffocated. All those burnt were in the main level. Six of them lay within 15 yards of each other, Lowe, Briggs, Wood, Martin, Hall, and Goodwin; Alcock and Clarke were 80 yards off; Bolsover was 280 from them. They were all on the same level. The conditions of an explosion would have been the same to all men on that level. Lowe, Briggs, and Alcock should have been working up a gate, but they were found on the level. The fire would certainly be in a much less degree in the gateways. The ventilation was affected by the explosion, which blew the doors downwards with one exception. For the time there would be no ventilation. I was down in the pit after the explosion. I was warned of it between 12 and 1."

Samuel Hardwick said: "I live at Renishaw Park Colliery, of which I am under-viewer. I look after both No. 1 and No. 2 pits. I was in both pits on Saturday, the 7th of January. I was in the north side and part of the south side of No. 1 pit. About a fortnight ago I was in the level of the south side. I went in at the dip slip, and came out at the far end of the jenny gate. I could not give you the exact measurement of the area."

The Coroner: "It appears to be one of your chief duties to do so."

Examination continued: "I don't treat the south level as the main airway. My duties are to see that all works are kept in a proper going state; I manage the distribution of the air in the pit. I have not full control to drive airways, or do anything necessary for the ventilation of the colliery."

Mr. Evans: "How can you manage the distribution of air if you are not at liberty to drive airways?—I have not that permission. Who is responsible for driving the airways?—*Mr. Joseph Wells*. He directs which way the ventilation is going to be, and I carry it out. There is no book kept at the colliery office where the daily state of the pit is entered. There may be a book at the general pay office, but I haven't seen it. I have a copy of the rules. I know rule 9, which says that the daily condition of the mine must be entered in a book at the colliery office. I have not obeyed it. There are two fire-triers, who examine the workings in No. 1 pit. *Francis Clarke* was the night fireman. It is his duty to report the state of the workings to the day fireman, *Thomas Hardwick*, who succeeds him. Clarke goes twice every night to places where men are working, and to mark on the gateroad ends and all the places where men are at work. The day and night firemen meet at the engine-road. They have no written communication, only verbal. The day fireman then goes through all the workings and reports to me at night if anything special wants to be done. He does not make a report if nothing is wanting. If the night fireman reports a small quantity of gas to the day fireman, or *vice versa*, I don't always hear of it. I believe there is a rule which makes it necessary that all the parts of the colliery shall be inspected at certain times. It is rule 16. I could not say that anyone travelled through the south level a week before the accident. My brother told me he had been through. The air that ventilates No. 2 shaft has had to pass through the side of No. 1 pit. There is a 12 to 14 feet area of airway along the bank faces which ventilates both pits. It is about 600 yards long. Rather more than half the men are at work on the south side of the two pits—perhaps 300. There are 15 horses in No. 1 pit, and 14 in No. 2 pit. The men in No. 2 pit were all suffocated. The men at the bottom of No. 5 were burnt. Bolsover also was burnt. I have been in the pit since the explosion, and examined the place where it took place. I think it occurred about 20 yards beyond the bottom of No. 4 gate—the place where the shot was fired. That was in the main level. The results of the explosion show plainly along the level that the explosion took place at that place where there is most destruction of corves and timber and the falls of roof are most prominent. The damage extends about 108 yards towards No. 3 gate, and about 670 yards the other way. I think the gas which exploded was four yards from where the shot was fired. It had probably accumulated behind some timber in the roof which was covered with slabs. There was a vacuum about 18 inches or 2 feet high by about 6 feet wide. I think the gas was there, and the shot having disturbed the timber, the powder fired the gas, and caused the explosion. There was an overcharge of powder."

Mr. Evans: "There must have been two explosions according to your theory?—Yes, but no man's ear could have distinguished them. There was little or no damage to the timber in the roof at the place where the vacuum was. The airway in the main level is 6 feet by 5 feet 6 inches. Near the place the airway is 5 feet 2 or 4 inches by 5 feet. I don't think the narrow place would offer great resistance. There is a great weight on

the timber, and they are very firm. No gas was reported to me the day before the explosion. There are no signs of fire on the timbers. There are great marks of violence both on the bottom and tops of the incline or jug-brow. The point of the incline is about 608 yards from where the shot was fired. There is no more violence along the incline than there is back along the level. The lower main level terminates a little beyond the jenny gate, where it is blocked up. I am at a loss to account for there being more damage in the jenny gate than in the level. I can't say what Portas was doing there."

William Keeton said: "I live at Marsden Moor, and am a lamp-cleaner at No. 1 pit. I was there on the night of the explosion. I gave the lamps between 7 and 8 o'clock. I can't say exactly how many—about 70. All were locked, clean, and in good condition, to the best of my knowledge. The lamps of the firemen were not locked. They had keys. I gave out Clanny and Davy lamps. As near as I can remember I gave out about a dozen Davy lamps. The rest were Clanny."

By Mr. Evans: "I think the whole of the 70 lamps have not been returned. All that came in while I was there were locked, except one which was rather loose. Some of the lamps were very much damaged—some of them cut in two."

By the Coroner: "I have not taken any account in a book of the lamps which were given to each man. I don't know whether it is the practice elsewhere. The lamps are not numbered."

Henry Cutts said: "I live at Eckington, and am a coal miner. I went into No. 1 pit on Thursday morning, the 12th of January. I went into the horse level to search for Bolsover. I found him at the far end of the horse level. He was covered over with a few stones and small dirt. He was a little burnt, and quite dead. I found his lamp about a yard from where he lay. It is broken into two pieces. I did not examine it to see whether it was locked or not. It was a glass lamp. He was lying on his side, with his head against an old wall, part of which had fallen on him."

Thomas Scott said: "I live at Mosbro'. I am a collier. I was employed as a contractor for ripping the roof in No. 1 pit—ripping means blowing down to make height for the ponies. We blow down about one yard and a quarter. We blow with blasting powder. Some we wedge down. I was in No. 1 pit on the night of the accident."

By Mr. Evans: "There would be 28 or 29 men on the south side pit and 9 or 10 on the north side of No. 1. Some were tramming, others were doing repairs, and others ripping. I had men working in No. 9 south. The men working about No. 4 gate level were not mine. I saw Francis Clarke just before the explosion. He was in No. 12 benk just where I was—at the west end of No. 1 pit. He followed me to there and told me he would go on to the far end of the south side—to the benk faces—to see the men who were working there. I came down towards the pit bottom. There came a regular rush of smoke as hot as fire—black smoke and dust. The men came rushing on out of the deep workings, and I went down the south level to No. 3 gateway. I came back to the bottom then and tried to shut the doors, but they were blown out. I went round all the working on that side before the explosion. Francis Clarke and a boy were with me. They were boring a hole near No. 4 gateway—Martin and others. I went on to the end of the level. There was a shot fired between that time and the explosion. Clarke, the boy, and myself got there about half-past six. The next time I got there was after the explosion. I didn't hear the shot go, so I suppose the explosion of the powder occurred at the same time or just before the explosion of the gas. I only heard one shock. I should not have heard the explosion of powder if it had occurred when I was at the extreme rise. I examined the pit that night in every place on the south side, but found no gas. I mean every working place. I did not walk the lower level all the way through. We tried it at both ends and in the middle. I was in the middle during the whole of the time they were getting out the bodies. After the explosion the others wanted to go, but I stopped them ringing any more up. After the explosion I went to the north side—to the north jenny—the doors were blown open. I then came back to the pit bottom, and went along the south level. After that I went to No. 3 passway and came back again. There was a little bit of stuff down. I waited then for assistance. Joseph Hardwick, John Smith, and another, went with me to No. 3 gate to prop the doors up. We reared some doors up at the bottom of the gate to turn the ventilation forward. We went a little further to No. 3 gate where we saw Thomas Goodwin lying just on the top side of the level. I went to the bottom again to send some more help, and left my two mates with Goodwin. Samuel and Thomas Hardwick then came down to the shaft and I went with them on the south level again to the bottom of No. 7 gate. Meanwhile, Goodwin had been removed to No. 1 pit-top. We could not get any further for the after-damp. We came back to the bottom, and got some straw and clothes to

make a stoppage at the bottom of each gate-road, so that we could get on. We put temporary stoppings, and Thomas Hardwick and I went to the end of the level and up the jenny. We found Portas near the top of the jenny. We found Billam near the drum; Mark Barker and Rhodes on the south level; David Wainwright on the side of a benk face; John Ellis, 'Irish Jack,' Webster and another man named 'Thomas,' a little further on. We helped to get them out, and then came out of the pit. We found a man who I believe to be George Webster a little before I saw Goodwin; the latter was alive, but the others were all dead. We found nine up the jenny; one at the bottom; three in No. 7 gate; and the rest were at bottom of No. 4 gate. I can't say how many. When we saw they were dead, we left them for others to take out, and went on."

By the Jury: "I am not a deputy. Francis Clarke was deputy. It is not my duty to go round the workings except where I had men at work. I did not send a son of Samuel Hardwick to do work that I ought to have done. A shot might have been fired, and I might not have heard it."

By Mr. Evans: "We found a great number of lamps."

By Mr. Wells: "If a shot had been fired in the pit I ought to have smelt the powder-smoke."

By Mr. Evans: "The shot might have been fired without my knowing it. I might have been in many places without hearing or smelling it."

By the Jury: "I never send anyone to do my work. It would take the men from two or three hours to drill a hole in the roof. They should drill it a yard and an inch or two. I take the work by contract."

By the Coroner: "The fire to fire the shot is got out of the Davy lamp by means of a wire by the charge-man—the man who bores the hole. The wire gets red hot, and he applies it to the fuse. Benjamin Martin was charge-man."

Samuel Hardwick, who, by the direction of the Coroner, had been to the pit to measure the airways, said: "I have been this morning to the extreme end of the workings. There was not sufficient air to turn the anemometer, because the ventilation has not yet been thoroughly restored. It requires 100 cubic feet per minute to turn the instrument. I can't give the quantity that was going into the south level at the time of the accident. On the south side 10,640, and on the north side 9,520 feet per minute, is an estimate of the ventilation of Nos. 1 and 2 pits on Saturday."

By Mr. Potter: "The pit was perfectly safe a fortnight before the accident. We never have found gas beyond No. 4."

By Mr. Evans: "No report was made of the furnace to me on Tuesday night. There is some weight on account of the extent of the workings. There are a few slips, but no faults."

By Mr. Busby: "There are no daily records kept. I only go in the mine occasionally. There may be gas without my knowing anything about it."

The Coroner said that there appeared to have been an admitted neglect of one of the principal rules of the colliery. Gas might have accumulated without the last witness knowing it, and it appeared to him (the Coroner) that he (witness) was responsible.

Thomas Hardwick said: "I live at the Rose and Crown Inn, Eckington, and am under-deputy at the Renishaw Park Colliery. I keep the public-house. I was in No. 1 pit at six o'clock in the morning of the 10th inst., and stayed there till the far end of the afternoon—about four o'clock. I went through the workings of No. 1 pit. To the north first, and then through the south. The ventilation was "much as usual." I have nothing to do with No. 2 pit. I went along the low level of the south side in the forenoon. I came out in the dips. I left a mark in the low level to show that I had been there. I made a mark at the entrance, in the middle, and in the end."

By the Jury: "I don't send anyone to go in my place. When I am out a man is put in my place."

By Mr. Evans: "I have been away a couple of days during the last fortnight. I ask my brother for permission to go away, so that he may get someone to do my work. I can't say whether the furnace-man was drinking at my house on the night of the accident or not. I know he ought to have been on duty."

William Barker, furnaceman, said: "I live at Eckington, and am furnaceman at the cupola. I was at home poorly at night. I took a walk down the village. I went into the Rose and Crown, and had one pint in the morning. I live opposite the Rose and Crown. No beer was brought to our house that night. I didn't feel well enough to go to work. I had no chance of sending."

Thomas Scott (recalled) said: "Benjamin Martin ought to have superintended the firing of the shot. A man named Wood helped him. Martin would point out where the hole was to be bored. It was a proper place for that purpose."

Samuel Hardwick (recalled) said: "I don't know that I have given any special orders except what are given by rule." The Coroner then read the rule requiring permission of the underviewer to be obtained before the shot was fired in places where safety lamps were used (Rule 38). Witness: "I directed Francis Clarke to take the roof down. Martin was acting under my general orders."

By Mr. Evans: "We have been taking down the low places for the last three months."

Scott, in answer to Inspector Hallam: "A powder bottle, which contained five or six pounds of powder, was behind a puncheon, about 10 or 12 yards from the shot. I don't know how much powder was used. Martin was a competent man."

By the Jury: "The quantity of powder depends on the stuff to be blown down."

By Mr. Evans: "I can't say whether the powder bottle was full or not when it went down the pit."

John Tindall said: "I am a coalminer, and live at Eckington. I was in the dips in No. 1 pit on the night of the accident. I noticed a shock about 20 minutes to 11. It was a stopping of the air. I heard nothing. I felt a drumming in the ear as though I was turned deaf. I heard no noise of an explosion."

By Mr. Evans: "I knew the time, because we looked at a watch shortly afterwards. I only felt one shock."

By the Jury: "I am sure it was before eleven o'clock. We stayed a little "while" the bad air cleared. I left Scott in the pit when I left. I went out in about a quarter of an hour after I got to the pit bottom."

The following witnesses, Messrs. Bainbridge, Appleby, and Cooper were called by the owners to describe their Inspection and give their opinions as to the cause of the accident:—

Mr. Emerson Bainbridge said: "I live at Sheffield, and am a mining engineer and coal owner. I examined No. 1 pit on Thursday morning. Mr. Appleby, Thomas Hardwick, and I went along to where the shot was fired. In passing along I examined the timber and the corves. I also examined the broken doors in Nos. 4 and 5 gates. I passed from there to the bottom of the jenny where Bolsover was found. I saw the broken corves and the falls of stones there. I passed up the jenny, and noticed that the "rapper" wire was broken. The jenny was about 350 yards long. I noticed three or four falls of stone. At the top of the jenny and on the drum I saw 12 empty corves, which had been crushed against the drum and had displaced it a few inches. This was the last point at which I saw any of the effects of the explosion. We went from there to the face of the coal above the drum. There was no effect visible there. I thought the area of airway against the face was at least 24 feet. Behind the face there are several packs of stone supporting the roof, and it is only where the packs occur that the area is only 24 feet. As far as I could judge, the fire of the explosion went half way up the jenny gate on the south side and not further up than No. 3 gate on the north side. I gathered from this and the amount of damage done that the explosion was very slight. I was surprised that so many deaths could occur in No. 2 pit—a distance of 2,000 yards from the place where the explosion is supposed to have occurred. I think the explosion was caused simultaneously with the firing of the shot. I think it took place somewhere between the place where the shot was fired and the spot where Colsover was found. I should think nearer the latter place. My first impression was that it occurred near the timber where the shot was fired, but as that was neither damaged nor singed, and as I don't think there could have been more than 150 cubic feet of gas above the timber, I cannot understand how the explosion could have occurred there. On the other hand, by far the strongest effects of the explosion are visible in the jenny gate—at the bottom—along the road and at the top. I don't think the flame from the shot fired the gas. As a general rule such a flame only extends 15 yards. The blast caused by the expansion of the air at the time of the explosion of the shot, which has apparently been too strong, was sufficient to fire the gas in a locked lamp. I think it did do so, unless one of the lamps was unlocked, of which we have no evidence. As the low level was examined that night, I can't imagine where the gas came from. My knowledge of the pit is not sufficient to enable me to judge whether the arrangements in the pit were satisfactory or otherwise."

By Mr. Evans: "Thomas Hardwick was with us. I should think Hardwick is better capable of judging the extent of the airway, as he has walked all along the face and I have not. As a mining engineer I do not consider it right that in collieries of this size the air which has already gone through one colliery should be allowed to ventilate another. Assuming the explosion to have taken place in the jenny gate, and a direct current of air sent into No. 2 pit from the downcast shaft, I think there would be a

probability of the lives of some of the men being saved. The whole of the stone broken down by the shot is broken into very small fragments, and an ordinary shot would not have done that. If a manager of a colliery finds a certain system of ventilation to answer the purposes of the colliery, he is justified, in my opinion, in continuing it."

Mr. Charles Edward Appleby said: "I am a coal owner, and live at Barlbro'. I accompanied Mr. Bainbridge on Thursday morning. I examined the level where the accident occurred. I went with him and Thomas Hardwick to the far end of the working level. At the jenny as far as the face was worked, and for a certain distance along the face of the work, at the entrance of a new level-gate. We returned and met Mr. Evans and party, and then proceeded back with them again. The result of my inspection would be the same as that given by Mr. Bainbridge. The force of the explosion in itself does not appear to have been very great, because no props or other timber were removed. There was loose material blown along the roads. Where it came against any resistance, and only then, would it do damage. The greatest force was expended at the bottom of the jenny-gate and at the top where the drum is fixed. Near the place where the shot was fired the effect seemed considerably less. The fact of the men being burnt on the level only seems to point out that the explosion occurred in the vicinity where the shot was fired. I am rather inclined to the opinion that it occurred further along the level than where the shot was fired, because the traces of it seemed to grow as we went along the level, and to lessen in the direction of the shot. I feel certain it was the result of the firing of the shot—that is the indirect result of it. The explosion of the shot liberated some gas, which it afterwards, though almost simultaneously, fired."

Mr. P. Cooper said: "I live at the Holmes, near Rotherham. I am a colliery viewer and manager for the Rotherham, Masbro', and Holmes Coal Company. I examined the south side of No. 1 pit on the day after the explosion. We passed along the south level and found evidence of the effects of an explosion. The corves for the most part of that level had been forced inwards. There was very little timber displaced. There was no charring. One side was unusually covered with dust as if it had been forced against it. In the openings on the right all the evidence we could find indicated that the force of the explosion proceeded upwards from the level and inwards into the mine. I was exceedingly surprised to find these effects, as in explosions we generally find the force to come out of the interior of the colliery; and also because the explosion appears to have occurred in one of the safest places in a mine—in one of the main airways. The tendency of an explosion is to go against the air current. There were no indications to show that the explosion had passed through the slits into the horse level out of the low level. The evidence indicated that the explosion was not violent. The full corves were but little moved. There was no question it was an explosion of firedamp, but it is most difficult to account for its existence under such circumstances. I should think it the most unlikely place in the colliery. I don't think it is an ordinary case. I think it is possible that there might have been firedamp above the timber, but not sufficient to cause the explosion. I think that the firedamp is passing off constantly. I don't think that it would always be detected. I think in a colliery where gas is discharged that the ventilation is sufficient. I think that the airways in No. 1 pit were sufficient to ventilate that pit. I cannot say whether they are sufficient for No. 2 without examining. I think the second colliery is placed at decided disadvantage as far as the ventilation is concerned. The upper pit (No. 2) has been in work about 10 years, and the other about two years before. The lower pit was formerly ventilated by a brattice. The system was altered in 1863."

Mr. Earl, surveyor and colliery agent, said: "I live at Chesterfield. I have just been down to the colliery to measure the air which goes to the dip workings. I find in the deep level about 12 square feet of area, and in that about 3,180 feet of air passing per minute. At the bottom of the jenny gate and the slit from the deep level to the counter level I measured. I find there an area of 16 feet 8 inches. There was not pressure of air sufficient to turn the anemometer at that point, although there was air passing. The cause was that the gates were not repaired. I didn't measure the place where some one said they crawled through. I didn't measure the area on the benk faces."

Thomas Evans, Esq., was examined, and said: "I am one of Her Majesty's Inspectors of Mines, and the Renishaw Park Colliery is in my district. I made an inspection of the underground workings in company with Messrs. Appleby, Hardwick, and others on 12th January. I found evident signs of an explosion of gas commencing at or near the entrance to gate No. 3, continuing along the level, and exhibiting greater violence up the incline or "jenny." From my inspection, and from the evidence I have heard here to-day, I believe the explosion took place at the bottom of the inclined plane or "jenny;" and for this reason, that from this point the tubs, the signal wire, and other things appear to have been blown up the hill, one of the tubs having been carried over the drum at the top of

the incline. There were a great many "falls of roof" along the level back from No. 8 towards No. 4, and I think there are as many indications of blowing outwards toward the downcast as inwards. The quantity of air said to pass along the south level about 10 feet from the downcast was 10,600 per minute, and this had to ventilate the whole of the south sides of Nos. 1 and 2 Pits. At each of the gate-roads in work there would be some leakage of air, and this is necessary to keep them free from gas. At the end of the level the quantity would be very much less than at the point where it was measured. The lower level referred to is nearly closed up at places; there would consequently be very little air passing along it. I think it very likely that the shot which you have evidence of displaced some gas in the lower level, and that it fired at the first defective lamp or open light. I do not agree with Mr. Cooper when he says that this point is the least likely place for an explosion to occur, and I feel satisfied the explosion of the powder, or rather the flame from it, did not explode the gas. If it took place where Hardwick says it did, there would have been some damage done to the timber used at that point for supporting the roof, whereas the props here are as good as when they were first put there. Bolsover was employed in cleaning the road, and while so engaged his lamp would probably be standing on the floor. It is possible it might have been damaged by a fall or otherwise, and the gas coming in contact with it would cause the explosion."

"I consider the quantity of air was very much too small for the ventilation of these extensive mines, and its distribution most imperfect."

"The south side of No. 1 pit ought to have had a separate split of air, which should have had no connexion with the workings in No. 2 pit. Had this been so the bad effects of the explosion would not have been felt in the rise workings. The discipline in the pit was most lax; gas might be given off, as you have heard in evidence, without the under-viewer knowing anything whatever about it. And the manager, Mr. Joseph Wells seldom or never goes into the colliery."

"I agree with Mr. Cooper and the other gentlemen that there was not a very large quantity of gas, but still it was a sharp explosion, and if the air had been split, as I contend and distinctly state that it ought to have been, the unfortunate men in the upper pit (some two thousand yards from the point of the explosion) would have been saved. I have frequently advised the owners to employ a competent mining engineer to advise them, and to be responsible for the safety of the workmen."

The Coroner, in summing up, said, "The jury had very patiently listened to the evidence in this lamentable case, which he (the Coroner) had heard very carefully for reasons independent of the present inquiry. He had not in any way shortened it, as he was desirous that they should have every detail before them which could throw any light on the cause of the explosion—resulting as it did in the loss of so many lives. But really the points for their consideration were very limited indeed, and he would simply direct their attention to those facts which would materially influence their verdict. The main features to be considered were the engineering and the discipline of the mine. No doubt it was, and it might be, a very serious question under the regulations of the Mines' Inspection Act whether the ventilation, the engineering, and the discipline of the mine had been carried on in the most intelligent way as they ought to have been, and with a due regard to the safety of the men. For proved negligence in these matters Government had provided certain civil—and in some instances criminal—remedies, to ensure compliance with the policy of the Acts; and the question whether this mine was or was not conducted on the best principles was a matter to be considered by them. Such inquiries were useful in directing public attention to the manner in which any great colliery is carried on, and in preventing a recurrence of those causes which brought about calamities such as the one they were discussing. But unless they could show a criminal negligence on the part of the colliery proprietors, such matters were scarcely for their consideration, and would have no influence upon their verdict. So far as the death of these unfortunate men had arisen from any laxity or breach of discipline on the part of the officials of the colliery, who might or might not have neglected their duties—it was for the jury to say whether or not such men were criminally responsible for their negligence; and however outside the question it might be, he was bound to remind them that there had been admissions and suggestions of a breach of the rules of the colliery, although it did not appear that such a neglect caused the death of the men, except so far as a want of discipline either relatively or nearer might be said to do so. He was also bound to tell them that when a man accepted a dangerous situation, he accepted it with all the risks and dangers attendant upon it, and he was bound to see that the rules were enforced for his own safety, and to take care that he did not enter into any contract dangerous to himself. Even though a colliery be under bad discipline, and bad engineering, and

without sufficient intelligence on the part of its officials, unless it could be shown that the death of the men had resulted from criminal negligence on the part of those officials, it was no concern of theirs in arriving at a verdict. There was of course the civil remedy for damages, but it was no part of his (the Coroner's) duty to point out any course in that matter. The man who undertook a dangerous contract, took upon himself the loss attendant upon such a contract, in the shape of its dangers, and appropriated all profits—in the shape of wages—which might accrue on the other hand."—The Coroner then proceeded carefully to review the leading points of the evidence which had been adduced, remarking that "the cause of the escape of the gas was a matter which was not, and probably could not ever be ascertained. It was, however, a material point in their inquiry, whether the explosion was caused by the shot or not. It did not appear that the man who fired the shot, or any of the 77 men working in the mine, were not in the performance of other duties, when the explosion took place, resulting as it did, not entirely but incidentally from the firing of the shot, whereby some men were burnt and others were suffocated. The probable cause was far too remote to fix it upon any one in the mine. It was for the jury to decide whether some of the officers of the mine, who had admitted that they had not strictly performed their duties in obedience to the rules, were guilty of negligence or not; but the question whether the accident would have been prevented if greater care had been used, was far too remote to enter into their consideration at the present time. Their purpose was to see whether the men had come to a violent death through the criminal negligence of any one, or otherwise. In his opinion, there was not sufficient evidence to point to a criminal negligence on the part of anyone, and on the other hand, it was no part of his duty to suggest that anyone was civilly responsible. In conclusion, he observed that it remained with the jury to decide whether the men met with their death through an accidental explosion of gas in a coal-mine, or not."

After a retirement of about a quarter of an hour, the jury returned, and the foreman (Mr. Rotherham) delivered the following verdict:—"It is our unanimous opinion that the deaths were accidental; but at the same time we recommend that a stricter supervision should be exercised by the underviewers."

The Coroner: "I think it unfortunate that the deputy of a colliery should keep a public house. It leads both him and the men into habits likely to create a laxity in the discipline of the colliery, which ought to be as strict as military discipline. I feel bound to take this opportunity of making such a remark."

Accident No. 11 in the Schedule

was an explosion of gas, and took place on the morning of the 20th March at Pilsley Colliery, Derbyshire, the property of Messrs. Holdsworth and others. For some hours previous to the explosion, there had been a "weight on" in the stall in which it occurred. The men withdrew into the windway and after the roof had settled, one of them, without due caution, returned to the stall and fired a small quantity of gas, which had no doubt come off during the "weighting" referred to. This man afterwards died from the effects of the burns and the shock, and a lad in the road near was thrown against a door and died from the injuries received. I suggested that until such time as the colliery (which is a new one) could be opened out and the roof be fairly settled locked safety lamps should be used exclusively.

Accident No. 22

was also an explosion of gas and happened at Ling's Colliery, belonging to the Wingerworth Coal Company, and situated near the town of Chesterfield. On the 15th May, as Thomas Bradley and another man were finishing their work for the day, and indeed, were getting ready to leave, they heard signs of the roof giving way. They retired into the gate road, but not far enough to be safe, for a small quantity of gas exploded at one of their naked lights, and Thomas Bradley received injuries which caused his death in a few days. I recommended that in future immediately the roof shows signs of weighting in any stall the men engaged there should retire into the main intake airway and not return to the stall until it had been examined by a properly qualified deputy with a safety lamp.

Accident No. 44

was another explosion of gas resulting in the loss of four lives. It occurred October 21st in the Blackshale Coal, at Locoford Colliery, near Chesterfield. There are two shafts at the extreme deep of the property, one of them being the down-cast, at the bottom of which the air is split, one part coursing through the East Workings and returning to the upcast at Locoford, and the other going up an engine plane into the

west workings and on to another shallow upcast at Newbold. It appears that a heading had been driven from a point on this second intake to a level communicating with the Newbold upcast. This had the effect of cutting off the greater portion of the air from the workings beyond the point where the head was started, to obviate which orders were given that cloths should be hung in the new road. On the following morning, some of the men who had come down the Newbold shaft were proceeding to their work by this route, and the moment they lifted the second sheet the gas fired, killing four men. The cloths had been fitted so tight to the head that the passage of the air was entirely stopped, and consequently the gas, which was produced in the head to the deep of the cloths, accumulated against the lowest of them in sufficient quantity to cause a very serious explosion. An opening a few inches high over the tops of the cloths would probably have been ample to have kept the place clear. Mr. R. G. Coke, a mining engineer of great experience, and Mr. Weston, of Eastwood, were called by the managing partner of the firm to give evidence at the inquest. They both said that, considering the occurrence of the explosion and from their inspection of the mine, there was not sufficient ventilation. I am of opinion that in extensive mines like this, having very shallow shafts, it is impossible to produce sufficient ventilation by furnace power.

Accident No. 51.

Another explosion of gas took place November 22nd at Norwood Colliery, near Killamarsh at the northern extremity of the county of Derby. This colliery is the property of the Sheepbridge Coal and Iron Company, Limited. I made an inspection of the works the following day, in company with the resident agent. The explosion, and the damage done by it, were confined to the deep workings, and almost exclusively to one stall, in which there had evidently been a very heavy weight on, so great as to force down a considerable quantity of roof, and to cause the floor to crack. The men on the first signs of the weight retired into the gate, where one of the deceased proposed they should "sit down and get some tobacco" until the roof had settled. This they did, and when all was again quiet as they were returning to their work, the gas which had come off from the roof, and partly, I believe, from the floor, exploded at a naked light and caused the death of nine men. Hutchby, one of the deceased, shouted to the rest "Squat lads," meaning, fall on the floor. His brother thought it no use doing so as the floor was covered with flame, and rushed out, falling over the others, and got to the pit bottom. The general ventilation of the colliery appeared to me sufficient under ordinary circumstances, the accident being another lesson tending to show that after a serious weighting of the roof in a stall, the men should not return to their work until the place has been examined by a trustworthy official with a safety lamp.

I am not aware that there are any more accidents in the schedule requiring particular notice.

Boys under the age of 12 in this district are almost entirely excluded from the workings underground, owing to the unwillingness of the masters to saddle themselves with the responsibility of complying with the law in the matter of school certificates. I am not aware that any serious inconvenience results from this exclusion, but it must be remembered that there are no seams worked here to which the term "thin" in its usual acceptation can be applied. There is no doubt that, in thick seams, a boy finds very little difficulty in accustoming himself to his work although he may not begin until more than 12 years of age. Employment of boys.

At all the large colliery establishments in my district, I am happy to say good school accommodation is provided, so that lads may obtain the rudiments of education, and if they continue their attendance, may become sufficiently advanced to be fit for positions of responsibility in the mines. The extended facilities provided by the "Education Act," will, no doubt, tend to produce a similar result at the smaller collieries. Schools.

As in previous years, complaints from workmen and others of the defective and sometimes dangerous condition of mines have been received by me, and although many of the letters were anonymous they have always had my immediate attention. Workmen's complaints.

I have, &c.

To the Right Hon. H. A. Bruce, M.P.,
Her Majesty's Principal Secretary of State,
Whitehall.

THOMAS EVANS,
Inspector of Mines.

LIST of the FATAL COLLIERY ACCIDENTS, and LOSS of LIFE arising therefrom, in the MIDLAND DISTRICT, during the Year ended December 31st, 1871.

Date.	No. of Accidents.	Name of the Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.						
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.	
1871.															
Jan. 4	1	Shipley	Derby	E. M. Mundy	Samuel White	Collier	15	Fall of roof in stall	-	1	-	-	-	-	-
" 5	2	Marchay	Ripley	Butterley Iron Co.	William Stocks	Ditto	52	Ditto	-	1	-	-	-	-	-
" 6	3	Waingroves	Ditto	Butterley Iron Co.	John Wild	Ganger	14	Fall of roof in roadway	-	1	-	-	-	-	-
" 10	4	Renishaw Park	Chesterfield	Jos. and Geo. Wells	-	Colliers and boys.	-	Explosion of gas	26	-	-	-	-	-	-
" 21	5	Swannington	Ashby-de-la-Zouch	Wm. Worswick	Thomas Webster	Collier	38	Explosion of powder	-	-	-	1	-	-	-
" 24	6	Langley	Ilkeston	Butterley Iron Co.	William Thornhill	Ganger	13	Crushed between tub and a prop	-	-	-	1	-	-	-
									26	3	-	2	-	-	31
Feb. 6	7	Highfield	Alfreton	J. B. Wilson and Co.	Francis Carter	Collier	28	Fall of bind in stall	-	1	-	-	-	-	-
" 11	8	Stanton	Burton	J. and N. Naden	Henry Budd	Ditto	43	Fall of roof	-	1	-	-	-	-	-
									-	2	-	-	-	-	2
Mar. 1	9	Foxley Oaks	Chesterfield	Whittington Colliery Co.	Samuel Turner	Ganger	13	Run over	-	-	-	1	-	-	-
" 13	10	Park House	Clay Cross	Sir W. Jackson & Co.	James Haslam	Collier	40	Fall of bind	-	1	-	-	-	-	-
" 20	11	Pilsley	Chesterfield	{ Pilsley Colliery Co., Limited.	Thomas Walvin	Ditto	46	Explosion of gas	2	-	-	-	-	-	-
" 21	12	Cinder Hill	Nottingham	J. Wright	Henry Hayes	Ganger	13	Fall of roof	-	1	-	-	-	-	-
" 24	13	Moorgeen	Eastwood	Barber, Walker, and Co.	Elijah Anthony	Collier	20	Fall of roof in stall	-	1	-	-	-	-	-
" 27	14	Birley Vale	Sheffield	Jeffcock and Dunn	Anthony Wilson	Ditto	27	Fall of coal	-	1	-	-	-	-	-
" 29	15	Old Hollingwood	Chesterfield	Staveley Iron and Coal Co.	Joseph Panhoham	Ditto	48	Fall of bind while examining roof.	-	1	-	-	-	-	-
" 31	16	Bréthy	Burton-on-Trent	Earl of Chesterfield	George Hewitt	Horse driver	42	Fall of bind while examining roof.	-	-	-	-	-	-	-
					John Tomlinson		43	Run over by railway truck near the colliery.	-	-	-	-	-	-	-
									2	5	-	1	1	-	9

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of the Colliery.	Where situated.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.						
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.	
1871.															
April 1	17	Hartsey	Ripley	Butterley Iron Co.	George Smith	Collier	55	Fall of roof	-	1	-	-	-	-	-
" 11	18	Devonshire Silkstone.	Chesterfield	Devonshire Silkstone Colliery Co., Limited.	Joseph West	Ditto	-	Fall of roof in stall (Blackshale coal).	-	1	-	-	-	-	-
" 11	19	Shireoaks	Workshop	Shireoaks Colliery Co.	Thomas Gee	Horse driver	13	Run over	-	-	-	1	-	-	-
									-	2	-	1	-	-	3
May 9	20	Whitwick	Coalville	W. Whetstone	Edward Newbold	Collier	26	Run over	-	-	-	1	-	-	-
" 16	21	Annesley	Mansfield	William Worswick	Henry Wightman	Ditto	18	Ditto	-	-	-	1	-	-	-
" 16	22	Lings	Chesterfield	Wingerworth Coal Co.	Thomas Bradley	Ditto	34	Explosion of gas	1	-	-	-	-	-	-
									1	-	-	2	-	-	3
June 8	23	Ammington	Tamworth	Glascote Colliery Co.	James Williamson	Ditto	43	Fall of roof in stall	-	1	-	-	-	-	-
" 17	24	Birley Vale	Sheffield	Jeffcock and Dunn	Thomas Bowskill	Ditto	63	Fell into sinking shaft	-	-	1	-	-	-	-
" 24	25	Silver Hill	Mansfield	Stanton Iron Co.	Thomas Hewitt	Ditto	26	Fall of roof (top hard coal)	-	1	-	-	-	-	-
" 24	26	Newbold	Chesterfield	Newbold Iron Co.	Godfrey Simpson	Ditto	21	Fall of clod roof (Blackshale coal)	-	1	-	-	-	-	-
									-	3	1	-	-	-	4
July 7	27	Cinder Hill	Nottingham	J. Wright	Edwin Lane	Incline boy	15	Run over	-	-	-	1	-	-	-
" 8	28	Riddings	Alfreton	James Oakes and Co.	George Godber	Ganger	13	Ditto	-	-	-	1	-	-	-
" 28	29	Clay Cross	Chesterfield	Sir W. Jackson & Co.	John Holbrook	Ditto	14	Fall of roof (Blackshale coal)	-	1	-	-	-	-	-
" 29	30	Tapton	Ditto	Tapton Coal Co.	Henry Siddall	Ditto	16	Run over	-	-	-	1	-	-	-
									-	1	-	3	-	-	4

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of the Colliery.	Where situated.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.							
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above Ground.	Total.		
1871.																
Aug. 4	31	Denby	Derby	W. D. Lowe	Elijah Briggs	Collier	55	Fall of roof (Kilburn coal)	-	1	-	-	-	-	-	
" 7	32	Shirland	Alfreton	Shirland Colliery Co.	Robinson Kelsey	Ditto	26	Fall of roof	-	1	-	-	-	-	-	
" 8	33	Whitwick	Coalville	W. Whetstone	William Simpson	Ditto	36	Ditto	-	1	-	-	-	-	-	
" 11	34	Clay Cross	Chesterfield	Sir W. Jackson and Co.	Benjamin Hughes	Ditto	48	Derangement in winding machinery.	-	-	-	-	-	1	-	
															4	
Sept. 15	35	Swannington	Coalville	Wm. Worswick	John Bradley	Ditto	27	Fall of roof	-	3	-	-	-	1	-	
" 22	36	Ammington	Tamworth	Glascote Colliery Co.	William Atkins	Ditto	25	Explosion of powder	-	1	-	-	-	-	-	
" 23	37	Springwell	Chesterfield	Staveley Iron and Coal Co.	Joseph Faraday	Ditto	45	Run over on incline	-	-	-	-	1	-	-	
" 29	38	Seymour	Ditto	Staveley Iron and Coal Co.	James Flowers	Ditto	45	Fall of coal	-	1	-	-	-	-	-	
" 30	39	Brampton	Ditto	R. W. Jackson, M.P.	William Bradshaw	Ditto	23	Fell into sump and was drowned	-	-	1	-	-	-	-	
															5	
Oct. 5	40	Whitwick	Coalville	W. Whetstone	George Blockley	Ditto	27	Fall of roof	-	1	-	-	-	-	-	
" 5	41	Bretby	Burton-on-Trent	Earl of Chesterfield	Jervis Adams	Ditto	60	Ditto	-	1	-	-	-	-	-	
" 13	42	Speedwell	Chesterfield	Staveley Iron and Coal Co.	Thomas Stones	Ditto	64	Fall of bind	-	1	-	-	-	-	-	
" 17	43	Clay Cross	Ditto	Sir W. Jackson and Co.	James Elian	Ditto	50	Fall of roof	-	1	-	-	-	-	-	
					Samuel Furniss	Ditto										
" 21	44	Tapton	Ditto	Tapton Coal Co.	William Furniss		-	-	Explosion of gas	4	-	-	-	-	-	-
					Joseph Oakley											
					Henry Lowe											
" 21	45	Stanton	Burton-on-Trent	J. and N. Nadin	George Mansfield	Mason	29	Fell off boiler brickwork	-	-	-	-	-	1	-	
" 24	46	Swadlincote	Ditto	Hall and Boardman	James Loon	Collier	14	Fall of roof	-	1	-	-	-	-	-	
" 30	47	Newcastle	Nottingham	J. Wright	George Lane	Bricklayer	38	Fell down shaft	-	-	1	-	-	-	-	
															11	

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of the Colliery.	Where situated.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.						
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.	
1871. Nov. 6	48	Plumtree	Eastwood	Butterley Iron Co.	John Bennett	Furnace man	66	Fell from part way down shaft	-	-	1	-	-	-	
" 15	49	Winecote	Tamworth	Perrens and Harrison	William Profett	Collier	30	Ditto	-	-	1	-	-	-	
" 17	50	Granville	Burton-on-Trent	Exors. of Court Greville	George Curtis	Ditto	-	Fall of roof	-	1	-	-	-	-	
					Enoch Lilley		94								
					Samuel Lilley		25								
					John Sivers		32								
" 22	51	Norwood	Chesterfield	{ Sheepbridge Coal and Iron Co.	John Drury	Colliers	21	Explosion of gas	9	-	-	-	-	-	
					Ezekiel Hart		36								
					Thomas Hutchby		51								
					Thomas Chambers		22								
					Nathaniel Barker		19								
" 28	52	Whitwick	Coalville	W. Whetstone	George Barthorpe	Collier	19	Fall of roof	-	1	-	-	-	-	
					William Haff		52		9	2	2	-	-	13	
Dec. 4	53	Hollingwood	Chesterfield	Staveley Iron and Coal Co.	Henry Samuel	Pony driver	14	Run over	-	-	-	1	-	-	
" 8	54	Hawkesbury	Bedworth	Hawkesbury Colliery Co.	Thomas Richards	Collier	16	Fall of coal	-	1	-	-	-	-	
" 27	55	Langton	Alfreton	Coke and Co.	James Artcliff	Ditto	63	Ditto	-	1	-	-	-	-	
" 30	56	Whitwick	Coalville	W. Whetstone	Charles Perry	Ditto	17	Fall of coal, injured in June	-	1	-	-	-	-	
									-	3	-	1	-	4	

REPORTS OF INSPECTORS OF MINES.

						1869.	1870.	1871.
January	-	-	-	-	-	10	4	31
February	-	-	-	-	-	7	3	2
March	-	-	-	-	-	8	4	9
April	-	-	-	-	-	9	4	3
May	-	-	-	-	-	6	2	3
June	-	-	-	-	-	5	7	4
July	-	-	-	-	-	4	2	4
August	-	-	-	-	-	3	5	4
September	-	-	-	-	-	4	2	5
October	-	-	-	-	-	5	12	11
November	-	-	-	-	-	5	1	13
December	-	-	-	-	-	12	4	4
Totals	-	-	-	-	-	78	50	93

Mr. Wynne's Report.

REPORT on the INSPECTION of MINES for the DISTRICT comprising NORTH STAFFORDSHIRE, CHESHIRE, and SHROPSHIRE, for the Year ending 31st December 1871.—By THOMAS WYNNE, Esq.

SIR,

Stone, February 28th, 1872.

It is now my duty to report what has taken place in the district under my charge during the past year; to describe as nearly as possible what was the cause of the loss of life, and to point out to the best of my ability how some of such lamentable accidents may be prevented in the future.

Explosions of Firedamp

Have been fewer in number and not nearly so disastrous as in the previous year, but still there is much to complain of in the way mines that are liable to give off explosive gases are carried on, and there does not appear to be any chance of improvement until the managers of both large and small concerns are brought to feel the heavy responsibility that rests upon them. There are several managers in my district who are quite alive to the danger of allowing even the smallest quantity of gas to accumulate in the workings, and who never rest until it is removed whenever symptoms make it appear that gas is being given off in ever so small a quantity. There are others who simply turn men into a pit as a farmer would turn sheep into a pasture, and expect the collier to take the same care of himself as a sheep does, forgetting the many unseen dangers that surround a collier from the time he leaves the surface until he reaches it again, and who, instead of being expected to take care of himself, should be cared for, as it is the duty of the workman to do a fair day's work for a fair day's wage, and not to spend his time in looking through all the holes and corners of the pit to see if there be any gas or other danger lurking in those holes and corners. It is clearly the duty of the manager and his subordinates to do this, and see that every place in the pit is made as safe as human foresight can make it. Then, and not until then, will mining become a far less dangerous occupation than it is at present, for experience clearly demonstrates the fact that where the manager exerts all his energies to keep up discipline and to ensure the safety of his men very few accidents happen.

The most distressing explosions are those that arise from preventible causes, and it is a melancholy fact that a majority of the explosions that occur are preventible, and it is my firm opinion, based on 20 years' experience as an inspector, that whenever an explosion takes place in a colliery from any cause whatever, except a sudden outburst of gas, there are some persons in authority who are well aware of the possible if not probable consequences long before it really happens, for it often comes out at an inquest that the underlooker or fireman knew there was gas in the place or in the immediate neighbourhood of the workings for some days, but for want of firmness and from the great desire to send out the full quantity of coal neglected to send the men out until the working places were made safe, preferring to let all the daily operations to go on until a more favourable opportunity turned up to remedy the defect, when an explosion is the consequence, and the blameable and blameless are together hurried into eternity.

The most severe explosion happened early in the year (January 3rd) at Leycett Colliery, near Newcastle-under-Lyme, the most unfortunate colliery in my district,—accident following accident in such quick succession that a change in the underground management became inevitable, and with it a change in the frequency and severity of the accidents, but still it is one of those collieries with a large capital, requiring a large "output" of coal to make it pay, and must necessarily cause great anxiety to an inspector unless he be satisfied that first-rate talent is engaged in the management. The seams of coal lie at an inclination of about 22 inches to the yard, and this explosion was entirely owing to the vicious system of having a great number of levels being driven out at the same time, some 20 and others 30 yards beyond the main air, with nothing but pipe or brattice ventilation, and that sometimes many yards back from the face.

This is a point that I fear escapes the attention of many colliery managers, for it will be seen by examining the plans of mines where explosions have occurred in straight work, that all the air utilised is brattice air, as in this case at Leycett; and how is it possible for the air to circulate freely when the only space open to it is behind a brattice or through pipes?

No. 15 in my list happened on May 24th at Berry Hill Colliery, near Stoke-upon-Trent, and was caused by an error in judgment on the part of the manager, who was sinking a pit by the side of a working level down to a lower seam, and had found gas to accumulate in the sinking pit to such an extent as to stop the workmen, but as this pit was an upcast, and drew its air from the working level that went past it, no danger was apprehended; but from some cause the air became reversed in the sinking pit, and the gas rising up it was carried through the opening into the level and would have passed on into the workings, had it not been fired before it reached there. This may have been avoided by sending more air into the bottom of the sinking pit, which would not only have cleared it of gas, but would also have prevented the air from becoming reversed, and is another case showing the danger of allowing gas to remain in any place after its presence has been ascertained.

No. 31 in the list occurred at Biddulph Valley in a heading 40 yards beyond any ventilation, but it was proved they had not seen any gas in the pit for three years, and of course worked with naked candles. The man in charge candidly admitted that he neglected to examine the place before the deceased went to work, and was fined by the magistrates for such culpable neglect.

The last fatal explosion of the year, No. 35, was at Messrs. Goddard & Sons, Foley Colliery, and was one of those cases where gas was known to exist, and where lamps were depended upon instead of good ventilation, and although gas was known to be within 18 inches of the roof of the working places, such was the discipline of the pit that a naked candle was allowed to be used in the drift 14 yards from the top of the drum road or jig, when a slight fall of roof on the goaf brought down the gas on to the candle. Surely the end of such things as these cannot be very distant.

Falls of Coal and Roof.

This class of accidents has not been so destructive to human life as in previous years, which is attributable to the carrying out with a firm will that excellent special rule that enjoins the setting of props and sprags every six feet, whether necessary or not, for who can say the roof is safe after its natural support is taken away, with all its slips, its slides, its backs, and things, that are not seen until a fall takes place; and it is satisfactory to know that it is likely the safe timbering of the working places of the mines will be thrown by the new Act upon those shoulders that alone can cause it to be efficiently carried out, and the remunerative price that coals are selling at will leave no excuse on the score of expense. There is no doubt the small number of 15 accidents, causing only 15 deaths, is due to the hearty goodwill with which all parties have carried out this rule, and I believe they would welcome a law that made it compulsory to timber working places whether it be considered necessary or not. It is a great mistake to suppose that the managers are opposed to the plan of making them responsible for the safe propping of the roof of the mine, for many of the best managers have told me that a change must take place, but how could they carry it out so long as the working of the mine is placed in the hands of butties or charter masters, whose sole object is to get money, and they are often listened to with more attention by the proprietor than is the manager, whenever the question of expense arises.

The whole of the 15 fatal accidents may be traced to the reprehensible practice of allowing the loaders to load up the coal before propping the roof, instead of putting up temporary props, allowing coal to overhang instead of pulling it down, allowing roof coal to be got down whilst men are working nearer than they ought to be, allowing men to set props who do not understand the true principle of propping, and leaving it to the collier himself to judge when is the right time to prop, instead of timbering the place for him whether he thinks it wants it or not.

In Shafts

There has been nine accidents, causing the death of 11 persons, but neither of these were by overwinding or breakage of ropes, but four out of the 11 were lost at Shelton Colliery and arose from unforeseen causes; No. 29 was caused by the valve of the engine sticking whilst lowering some sinkers to their work, and although it had done so before it was righted without much trouble, and in the other case some sinkers were repairing an old shaft when the side gave way and the scaffold fell; in cases like this it is the duty

of the sinker himself to see that all is done to make the scaffold secure, for no manager can understand this matter so well as one of that fine class of men, the master sinkers. No. 28 was a very bad case, for it had been long known that the cage was daily out of repair, and that the side bars were off for days together, and no one seemed to think it was his duty to repair it, and I believe they all thought it useless to do so until the shafts and guides were thoroughly repaired, and nothing but the loss of a life was sufficient to move those parties to a sense of their responsibility.

Where the winding is particularly slow it generally happens that a mere boy is the hooker-on, and he often amuses himself by hanging on the draught and riding a short distance up the pit and dropping on the bottom, and in this way a boy lost his life in Wombridge Colliery, for it has been clearly proved, that when the boy becomes alarmed he cannot possibly loose his hold although quite conscious of his danger, and he holds on until his fingers become cramped and a death fall is the consequence. One death was that of an engineman, who fell down the shaft, and it appeared that he was not in a fit state to resume his work or it would not have happened; one fell out of a cage by some means not clearly proved; one was crushed by the cage at the bottom of the shaft, but being the manager no one was responsible but himself for the position he was in; and one was drowned in a sump, but he also was a man in authority, and lost his life by performing his duty in a way that was highly dangerous to himself and would have been blameable had he set others to do it in the same way.

Miscellaneous Causes

Have also been favourable to my district, for although only three lives have been lost by the immoderate use of powder a vast number have escaped with their lives, but with serious personal injury, and it is a source of the highest gratification to find that the public is at last determined to put an end to the reckless use of this dangerous compound, and direct in what way it shall be removed for the future. Four persons have lost their lives on inclines, which nothing can prevent but great care and attention in laying the rails, and great discrimination in the choice of the man who is appointed to jig the load down the incline, and of him who has to catch it at the bottom, for those are the persons who suffer most from any negligence. The other cases are of the usual character which beset a man who is engaged in so dangerous an occupation as mining; and this too applies to the three cases above ground, for where men are constantly employed about a colliery, with its railways and tramways, its engines and pit frames, and other dangers, some casualties may be expected to take place.

Ironstone Mines.

In this class of mines there is reason to believe that all accidents are reported and registered, whether they come within the meaning of the Inspection Act or not, consequently they may appear more numerous than they should be when compared with other districts, but we must not expect the number of deaths to be very much reduced in North Staffordshire where the ironstone is of such a thickness, or in Shropshire where tons of rubbish are drawn for every ton of ironstone. In February, three lives were lost at the Tileries colliery by a fall of roof, and the Coroner's inquiry brought to light as reckless a proceeding as can well be imagined. The drift was 12 yards long and four yards wide without any support for the roof, and although they were aware that there was a "slip" in the roof the men were sent to work in the place, the butty remarking, "Lads, we must have two or three posts in here," but whilst he was fetching them three poor fellows were killed. The manager had not been in the place for eight days, and the place was left to the care of butties, whose ignorance was only equalled by their impudence in contending that all was done that lay in their power to prevent this sad calamity.

It is very satisfactory to find that at the end of 21 years' experience of the working of the various Mines Inspection Acts, the public freely admit the immense amount of good that has been effected by a firm, but not offensive administration of those laws, and when we find that the "get" of coal has increased from 40 millions of tons to 117 millions, with no increase in the number of deaths, it must be admitted on all hands that the slight restraint put upon some parties has worked for the general good, and has prepared both masters and men to withhold some of their former objections, and agree upon the principle to carry legislation on the working of mines a little further than it has already gone.

I have, &c.

The Right Hon. H. A. Bruce, M.P.,
Her Majesty's Principal Secretary of State,
Whitehall, London.

THOMAS WYNNE.

REPORTS OF INSPECTORS OF MINES.

LIST of the FATAL COLLIERY ACCIDENTS, and Loss of LIFE arising therefrom, in the NORTH STAFFORDSHIRE, CHESHIRE, and SHROPSHIRE DISTRICT, during the Year ending 31st December 1871.

Date.	No. of Accidents.	Name of the Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost in Coal Mines.						
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above Ground.	Total.	
1871.															
Jan. 9	1	Biddulph Valley	Tunstall	Heath and Son	Thos. Simms	Waggoner	17	Fall of coal	-	1	-	-	-	-	1
" 12	2	Clough Hall	Ditto	Kinnersley and Co.	Wm. Randles	Collier	33	Fall of roof	-	1	-	-	-	-	1
" 23	3	Leycett	Newcastle	Crewe Coal Co.	J. Johnson and others.	-	-	Explosion of fire-damp	-	-	-	-	-	-	8
Feb. 28	4	Daisy Field	Hyde	Booth and Marland	A. Thomas	Engineman	30	Fell down the shaft	-	-	1	-	-	-	1
Mar. 2	5	Winterfold	Macclesfield	Kirk and Walker	J. Whitehurst	Collier	22	Fell out of cage	-	-	1	-	-	-	1
" 23	6	Bradley Green	Congleton	Wm. Bradbury	J. Walley	Ditto	-	Fall of coal	-	1	-	-	-	-	1
" 23	7	Quinta	Oswestry	Quinta Colliery Co.	D. Rowlands	Carpenter	60	Part of pit frame fell on him while raising it.	-	-	-	-	-	-	1
Apr. 1	8	Clough Hall	Tunstall	Kinnersley and Co.	Jno. Wilson	Waggoner	22	Fall of roof in main road	-	1	-	-	-	-	1
" 19	9	Leycett	Newcastle	Crewe Coal Co.	Jno. Leighton	Collier	28	Fell down the jig brow	-	-	-	1	-	-	1
" 29	10	Foley	Longton	Goddard and Sons	Charles Archer	Ditto	22	Fall of roof	-	1	-	-	-	-	1
May 3	11	Podmore Hall	Newcastle	Cooper and Craig	George Boughey	Ditto	40	Ditto	-	1	-	-	-	-	1
" 13	12	Sneyd	Burslem	C. and J. May	Moses Ellis	Manager	-	Crushed between cage and bearers at bottom of shaft.	-	-	1	-	-	-	1
" 18	13	Leycett	Newcastle	Crewe Coal Co.	John Brookes	Fireman	30	Fall of roof	-	1	-	-	-	-	1
" 24	14	Dunkirk	Dunkirk	Dunkirk Co.	Wm. Walker	Collier	-	Ditto	-	1	-	-	-	-	1
" 24	15	Berry Hill	Stoke	Wm. Bowers	H. Pickering and another.	-	-	Explosion of fire-damp	-	-	-	-	-	-	2
June 10	16	Clough Hall	Tunstall	Kinnersley and Co.	Peter Rathbone	Collier	49	Explosion of powder	-	-	-	-	1	-	1
" 15	17	Poynton	Stockport	Lord Vernon	Wm. Bealey	Ditto	48	Fall of roof	-	1	-	-	-	-	1
" 17	18	Leycett	Newcastle	Crewe Coal Co.	Jno. Clarke	Fireman	41	Drowned in sump	-	-	1	-	-	-	1
" 30	19	Norton	Burslem	Heath and Son	Wm. Hall	Loader	-	Fall of roof	-	1	-	-	-	-	1
July 22	20	Poynton	Stockport	Lord Vernon	P. Warburton	Fireman	61	Crushed by tubs on incline	-	-	-	-	-	-	1
" 27	21	Bucknall	Hanley	R. Yeomans	W. Handley	Boy	-	Scalded by steam under ground	-	-	-	-	1	-	1
Aug. 25	22	Clough Hall	Tunstall	Kinnersley and Co.	H. Bailey	Collier	20	Fall of coal	-	1	-	-	-	-	1
" 23	23	New House	Shrewsbury	Mr. Fenn	Jno. Clayton	Waggoner	16	Fell out of skip ascending a gin pit.	-	-	1	-	-	-	1
" 26	24	Norton	Burslem	Heath and Son	Wm. Griffiths	Boy	19	Crushed on the jig	-	-	-	-	1	-	1
" 31	25	Shelton	Stoke	Earl Granville	H. Collins	Collier	26	Fall of coal	-	1	-	-	-	-	1
Sept. 9	26	Leycett	Newcastle	Crewe Co.	T. Brazier and another.	Ditto	-	Slow shot exploded	-	-	-	-	2	-	2
" 13	27	Talke	Ditto	North Stafford Co.	D. Corden	Ditto	18	Fall of roof	-	1	-	-	-	-	1

List of Fatal Colliery Accidents—*continued*.

Date.	No. of Accidents.	Name of the Colliery.	Where situated.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost in Coal Mines.						
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.	
1871.															
Sept. 17	28	Talke	Newcastle	North Stafford Co.	Wm. Smith	Collier	18	Fell out of cage whilst ascending	-	-	1	-	-	-	-
" 26	29	Shelton	Hanley	Earl Granville	E. Evans and another.	Sinkers	-	The engine ran owing to the valve sticking.	-	-	2	-	-	-	-
" 27	30	Apedale	Newcastle	Stanier and Co.	S. Lingard	Jigger	33	Caught by the chain and crushed at drum.	-	-	-	1	-	-	-
Oct. 2	31	Biddulph	Congleton	Heath and Son	H. Smith	Collier	30	Explosion of fire-damp	1	-	-	-	-	-	-
" 10	32	Silverdale	Newcastle	Stanier and Co.	Jno. Hurst	Ditto	28	Fall of coal	-	1	-	-	-	-	-
" 17	33	Leyceit	Madeley	Crews Coal Co.	D. Lockett	Ditto	46	Fell against a tub in level	-	-	-	1	-	-	-
" 18	34	Podmore Hall	Newcastle	Cooper and Craig	J. Viggers	Ditto	22	Crushed by tub on incline	-	-	-	1	-	-	-
" 19	35	Foley	Longton	Goddard and Sons	J. Thorley and another.	-	-	Explosion of fire-damp	2	-	-	-	-	-	-
" 23	36	Bradley Green	Congleton	W. Bradbury	W. Bayley	Collier	16	Fall of coal	-	1	-	-	-	-	-
" 30	37	Biddulph Valley	Ditto	Heath and Son	J. Sutton	Loader	19	Crushed by tub on incline	-	-	-	1	-	-	-
Nov. 6	38	Booden	Hanley	Earl Granville	G. Salt and another	Sinkers	-	Scaffold gave way whilst repairing shaft.	-	-	2	-	-	-	-
" 15	39	Stanfield	Burslem	Tellwright and Co.	W. Speakman	Boy	-	Crushed between tubs on tramway	-	-	-	-	1	-	-
" 23	40	Wombridge	Wellington	Executors of late J. Bennett.	J. Wynn	Ditto	-	Caught hold of the hook and was drawn part way up the pit.	-	-	-	-	-	-	-
								Total -	13	15	11	10	3		52

LIST of the FATAL IRONSTONE ACCIDENTS, and LOSS of LIFE arising therefrom, in the NORTH STAFFORDSHIRE, CHESHIRE, and SHROPSHIRE DISTRICT, during the Year ending 31st December 1871.

Date.	No. of Accidents.	Name of the Mine.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost.						
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.	
1871.															
Feb. 3	1	Silverdale	Newcastle	Stanier and Co.	T. Allman -	Waggoner -	16	Fall of timber and roof in the road	-	1	-	-	-	-	-
" 4	2	Goraty Hill	Ditto	J. H. Pearson	S. Pepper -	Miner -	22	Fall of stone -	-	1	-	-	-	-	-
" 4	3	Tileries -	Tunstall	Thos. Peake -	Chas. Horley and 2 others.	-	-	Fall of roof -	-	3	-	-	-	-	-
Mar. 4	4	Chesterton	Newcastle	E. C. Peake	F. R. Thorneycroft	Butty -	44	Crushed under a bridge on surface	-	-	-	-	1	-	-
" 25	5	Longton Hall	Longton -	A. and C. Glover	Jesse Jackson -	Miner -	35	Fall of roof -	-	1	-	-	-	-	-
Apr. 11	6	Lilleshall	Wellington	Lilleshall Co. -	J. Millington -	Horsekeeper -	40	Fell out of the double chains	-	-	1	-	-	-	-
May 19	7	Ditto -	Ditto -	Ditto -	S. Ferriday -	Hooker-on -	15	Hook caught his clothes and was drawn part way up.	-	-	1	-	-	-	-
July 14	8	Hamill -	Burslem -	Wedgwood's Represen.	H. Finney -	Miner -	17	Explosion of fire-damp	1	-	-	-	-	-	-
" 14	9	Foley -	Longton -	Goddard and Sons -	E. Lynch -	Ditto -	-	Fall of roof -	-	1	-	-	-	-	-
" 22	10	Hem-Heath	Newcastle	Hem-Heath Co. -	T. Aldersea -	Ditto -	-	Fall of stone -	-	1	-	-	-	-	-
Sept. 8	11	Chesterton	Ditto	Stanier and Co. -	J. Hancock -	Boy -	11	Caught in gig chain	-	-	-	1	-	-	-
Nov. 5	12	Fork -	Broseley -	Wm. Exley -	Jno. Barker -	Ditto -	-	Fall of roof -	-	-	-	-	-	-	-
" 13	13	Lilleshall	Wellington	Lilleshall Co. -	Jno. Tart -	Driver -	16	Explosion of powder	-	-	-	-	1	-	-
" 18	14	Hinkshey	Ditto	Leighton and Grenfell	R. Mansell -	Carpenter -	63	Derrick pole broke in raising a pulley	-	-	-	-	-	1	-
" 29	15	Lilleshall	Ditto	Lilleshall Co. -	W. H. Bull -	Boy -	15	Fall of dirt in main road	-	-	-	-	-	-	-
Dec. 9	16	Chesterton	Newcastle	Stanier and Co. -	W. Sambrook	Miner -	-	Fall of stone -	-	-	-	-	1	-	-
" 14	17	Lilleshall	Wellington	Lilleshall Co. -	G. Ashley -	Ditto -	22	Fall of roof -	-	1	-	-	-	-	-
								Total	1	11	2	3	2		19

NUMBER and NATURE of FATAL ACCIDENTS to PERSONS employed in and about COAL MINES and COLLIERIES in the District comprising NORTH STAFFORDSHIRE, SHROPSHIRE, and CHESHIRE, during the Years 1867, 1868, 1869, 1870, and 1871.

Year.	Explosions of Firedamp.	Falls in Mine.			In Shafts.								Miscellaneous Underground.								On Surface.				Gross Totals.		
		Falls of Coal.	Falls of Stone.	Total Falls in Mines.	Overwinding.	Ropes and Chains breaking.	Whist ascending or descending.	Falling into Shaft from Surface.	Things falling from Surface.	Falling from part way down.	Things falling from part way down.	Miscellaneous in Shafts.	Total in Shafts.	Explosions of Gunpowder.	Suffocation by Gases.	Irruptions of Water.	Falling into Water.	On Inclined Planes.	By Trams and Tubs.	By Machinery Underground.	Sandries Underground.	Total { Miscellaneous Underground.	By Machinery on Surface.	Boilers bursting.		Miscellaneous on Surface.	Total on Surface.
1867	Number of Accidents	11	10	15	25	-	2	4	5	1	3	-	15	3	-	-	-	4	2	-	1	10	-	-	-	1	61
"	Number of Deaths	17	10	17	27	-	3	7	5	2	3	-	20	3	-	-	-	4	2	-	1	10	-	-	-	1	74
1868	Number of Accidents	7	10	18	28	-	1	2	2	-	3	-	8	1	1	-	-	2	4	-	2	10	3	1	-	4	57
"	Number of Deaths	9	10	18	28	-	3	2	2	-	3	-	10	1	1	-	-	2	4	-	2	10	3	1	-	4	61
1869	Number of Accidents	3	10	15	25	-	-	-	2	-	2	1	7	2	-	-	-	5	1	-	1	9	1	-	-	1	45
"	Number of Deaths	7	10	15	25	-	-	-	2	-	2	1	7	3	-	-	-	5	1	-	1	10	1	-	-	1	50
1870	Number of Accidents	6	20	8	28	1	-	1	2	2	1	4	12	3	1	1	-	6	1	1	-	13	-	-	1	1	60
"	Number of Deaths	33	20	8	28	1	-	1	2	2	1	4	12	3	1	1	-	6	1	1	-	13	-	-	1	1	87
1871	Number of Accidents	4	6	9	15	-	-	4	1	-	1	-	9	2	-	-	-	4	1	2	-	9	-	-	3	3	40
"	Number of Deaths	13	6	9	15	-	-	5	1	-	2	-	11	3	-	-	-	4	1	2	-	10	-	-	3	3	52

Mr. Brough's Report.

REPORT of the WORKING of the MINES INSPECTION ACT (23 & 24 Vict. c. 151.) for
the SOUTH-WESTERN DISTRICT, during the Year ended 31st December 1871.
—By LIONEL BROUGH, Esq., F.G.S.

SIR,

Clifton, 16th March 1872.

I HAVE the honour to report on the South-western District of mines during 1871, and, as always, I commence with those in coal.

Seventy-eight notices of fatal accident have been received—70 of them properly find their place in the "List," where they are all clearly and sufficiently described. The remaining eight, however, do not, as far as I can judge, come within the provisions of the Act of Parliament; nevertheless, full mention and particulars about them will be seen in the body of this Report.

The results of the year bear no comparison with those of 1870; reference to the customary five death columns will too clearly corroborate that statement.

In 1870 only three persons lost their lives by fire damp, but in the year under notice 23 perished; and this source of death, in fact, is, to a certain extent, the cause of the difference between the two years; again, unfortunately, augmented by excess in the second heading, "Falls of coal and roof;" in 1870 but 27 persons fell victims, but in 1871 the number mounted up to 35.

Pit accidents have also swelled the general returns considerably, for now 14 men and boys have been killed, whilst in 1870 there were only 3 deaths in all.

"Miscellaneous underground" is not so very bad, but still it is slightly against the present year.

The last column, "Above ground," is less loaded than the others, but even in that, the diminution is only one in favour of 1871.

Thirty-eight deaths in excess is a serious matter, and it looks still more grave in proportional figures; in 1870 the number of tons of coal to one death was 127,451, but in the year under report it has gone down to 78,652 tons; therefore I am justified in regarding 1871 as altogether an exceptional year.

Touching non-fatal accidents, 132 occurred, which is much about the same as in 1870.

I have now to deal with the Ironstone Mining District:—This year resulted in the death of 11 persons, and 20 non-fatal accidents occurred; whereas, in 1870, 12 people were killed, and 17 were wounded—being thus much on a par.

In 1871 eight men and boys lost their lives from various causes, but under circumstances that exclude their entry in the Lists. In the previous year seven accidents of this class took place.

Further on in this Report reference will be made to—and, to a certain extent, description will be given of—some few of the casualties under the three already indicated heads, but I must previously bring every one of them together, and concentrate them in the following manner:—Fatal separate accidents in coal mines 70, deaths therefrom, 89; non-fatal, 132, inflicting injury on 157 persons; fatal separate casualties in Ironstone mines, 11, consequent deaths, 11; non-fatal, 20, hurting 20 persons; occurrences that find no place in the Lists, 8, bringing about 8 deaths; total, 241 reported separate accidents, affecting 285 persons, of whom 108 lost their lives, and 177 underwent suffering by injuries received in varied manner and form.

I will now refer, as previously stated, to such of these occurrences as demand particular mention, with that amount of description that each quoted accident may require, and, in doing so, I will follow the order of the fatal columns:

Firstly, the most deplorable event of the year happened on the 2nd of March, whereby 19 industrious and well-conducted workmen were cut off from this life in that duration of time only to be counted by seconds, and but by very few even of them. This catastrophe took place in the No. 1 pit Victoria, in the county of Monmouth, and after

having done all that lay in power as regards inspection and investigation, I then attended the inquest, and I now insert a copy of the testimony I gave there, because I believe it contains as near an approach to actual facts—as under the circumstances—could be well arrived at. The reproduction of that evidence is all that I have to say in this report on the subject, with the exception of one observation, which is that the whole order of events which are supposed to have taken place on that melancholy occasion tell rather forcibly against the cross-heading system so long in use in Wales. Had self-acting inclines been used, or the tail-rope method, or any other class of “mechanical lead,” instead of horses and hauliers, my opinion is that this dreadful explosion might never have taken place at all.

Copy of Inspector's Evidence.

“When I received notice of the explosion, I went down the Victoria No. 1 pit that night and again the next day. Mr. James (head viewer) has already explained how the pit is laid out and how it is ventilated. His under viewer, Mr. David Evans, has also given much useful evidence on that subject, therefore I need not take up the time of the jury by unnecessary repetitions. This disaster is difficult of solution. At the Pentre pit in the Rhondda Valley the other day my conclusions were arrived at before ever I left the pit, although I altogether failed to reach the northern extremity of that colliery, on account of the presence of large quantities of fire damp in that particular direction. The explosions and inquests in my own district since then forbade that I should again visit there after the gas had been cleared away. Nevertheless, the cause of the calamity at the Pentre, and where the ignition took place, became facts most satisfactorily accounted for and clearly understood. But here in No. 1 pit Victoria, the only point fully and completely discovered is—that the explosion took place in Joseph Gallop's stall; no other statement can be safely sworn to. Notwithstanding this, I will endeavour to lay before the jury approximate and reasonable conclusions; I may, however, premise that the recent group of explosions in Monmouthshire and Glamorganshire was preceded and accompanied by continued oscillation of the barometer, and even for days after the mercury was restless in the extreme. Moreover, of all the seams in the county in which we are now assembled, not one has ever proved more fiery than the ‘Old Coal.’ It is true that only a single place was carried on with a locked lamp, but that whole section of the colliery stalls, heading, and all, lay at the mercy of an indiscreet person who accidentally, or intentionally, chose to go in where Joseph Gallop was employed. In my own mind I have not the slightest doubt that this very explosion was so brought about. I will never believe that the gas fired at the safety lamp, because at that time we know by evidence there was not sufficient speed in the travel of the air to force an inflamed mixture through the gauze, and in all respects we know also that that lamp was a good one for such low velocities as it was manufactured to provide against. Thus then, as already stated, we well know where the catastrophe originated, and now we are almost able to say how it occurred, so that a knowledge of the two main leading circumstances may be said to be in our possession. I must state again that it did not ignite at the lamp, but it is pretty certain that it did do so at naked flame heedlessly brought into Gallop's stall by some person, who, in all probability had no business whatever in that particular place. We have not been informed who he was, and it is more than probable that that knowledge will never be extended to us.

“Here again we have another mournful instance of the danger that is inseparable from the practice of using mixed lights in the same district of work. Patient and numerous experiments have shown that if air is so far contaminated by carburetted hydrogen gas as to have arrived at the point of explosion, and if in that fouled condition, a davy or a clanny lamp be submitted to velocities up to eight feet per second and over they are no longer to be trusted, and the flame should be immediately extinguished by means of the pricker. As regards the investigation we are now occupied with, no such speed existed in all or in any part of the No. 1 workings, therefore it may be accepted as the truth that it was not the ‘davy’ that fired the pit on that occasion. Now with regard to the general ventilation, the wind has some considerable distance to travel, which imposes upon it a certain amount of friction. Last year I was down this No. 1 pit, and then it was pointed out to me that a considerable improvement in the mode of airing was intended by sinking a certain pit 60 yards deeper, so that the ‘Old Coal’ might have its wind separate from any other source. This scheme afforded me much satisfaction, and the sinking was actually commenced. Mr. James will no doubt be able to explain the obstacles which have delayed the execution of this plan, but it is to be regretted that he did not pursue it to the end, for it would have been a remedy for all their difficulties as regards the ‘Old Coal.’ It is just and proper that these circumstances should come

to the knowledge of the jury, in order to show that the safety of the people cannot be said to have been treated with indifference by any one single party concerned.

"Mr. James detailed in his evidence that on the day of the explosion he met Mr. David Evans at the No. 3 pit, who then reported to him that 'he had been with the overman and fireman through all the No. 10 workings, and had found the ventilation very good, and that he was well satisfied with the condition of the work.' This by no means shows neglect of *duty*, but I repeat that it is more than probable that if the alterations we all agreed on last year had been duly executed, we should not be now assembled together on the present distressing occasion. Mr. James said in evidence, 'We are now in a condition to carry out, by means of No. 8 pit, the scheme proposed by Mr. Brough last year.' I have not the least doubt but that he will verify his intentions.

"Mr. James thinks that the fall at Gallop's 'parting' released gas, and says besides 'that a small blower was discovered in the same man's stall near the spout hole, and that a naked light came in contact with it.' Mr. David Evans supposes that 'in No. 6 stall (Gallop's) there was a blower, and that with the fall on the heading, and with the bustle with the hauliers, the current of air became stopped.' Others suppose that 'the fall on the top of which the horse lay came down before the explosion,' and so on. It now, therefore, becomes my duty to give evidence on these matters, but, after all, like that of the rest, only the evidence of opinion; still it tends strongly towards probability. Unquestionably something had occurred with one of the journies of trams, but no one who escaped death can tell us really what it was. Those who alone knew what had happened have passed for ever from amongst us. The sheet door that prevented the air from being cut off from Gallop's working place may have been left open by one of the hauliers, or the contrary; or it might have been burst through by a frightened horse; none can tell which. It is difficult to determine whether the fall preceded the explosion, or was brought down by its concussion. There is one thing certain—the horse was found dead on the top of it. If the fall came first, his presence there would be due to want of spragging; if afterwards it would be caused by fright, for no animal is more susceptible to alarm than a horse. However it might have been, there is nothing in the circumstance to guide our opinions or influence the verdict. One thing is certain, that there was a commotion amongst the hauliers; something serious had evidently occurred. Here it will be proper for me to remark that if we could but get our pits so arranged as to avail ourselves of the manifold advantages of the 'tail rope system,' we should no longer be dependent on the prudence of hauliers, or the nervous constitution of that most useful of all animals—the horse. Evidence has shown that Joseph Gallop was supplied with a safety lamp; the appearances clearly rendered that sort of light necessary. Tunley said the man (Gallop) did not like it, but with great prudence and resolution he (Tunley) insisted on its continued use. He also testified to what most of us know so well, 'the back of the gobs squeeze and puck, and the thurlings get smaller and smaller by squeezing.' This was clearly the case between the stalls occupied by the two Gallops, and to such an extent that in Joseph's working place the current had become too faint to sweep away the gas that was eliminated from the coal. This must all have been known to the poor fireman who lost his life, or he would not have insisted on the use of a safety lamp in that particular stall. In further proof of which he also, and most properly, ordered another spout hole to be 'headed away' directly, so as to secure the normal quantity of air into that suspected place; this was most significant. All that we can say against him is that he should have got this new thurling more quickly driven through.

"My own conviction then is, that in consequence of the throttling of the air in the squeezed windway, that stall filled in the face with a certain amount of firedamp. Then all would have been right enough, because Gallop was provided with a safety lamp, but unfortunately and without doubt, someone blundered in with a naked flame, and all this destruction of human life was consummated in the brief space of a few seconds. I do not believe that a large body of gas fired; on the contrary, the state and condition of the heading and of the stalls show that it could not have been much, but unfortunately quite sufficient to scatter death in all directions, and this too in but really a limited area of operation, and with not more than thirty-four persons employed in the whole district."

In answer to the jury I stated that "if the spout hole had been made no accident or explosion would have taken place."

In answer to the coroner I said, "I believe the spout hole in Gallop's stall got squeezed, so that the wind could not come through freely, and some person rushing in with a naked light must have set fire to the gas. The fireman Price gave the only remedy in his power; he ordered a fresh spout hole to be made, and he put Gallop to do that work with a safety lamp."

This was all the evidence, and the coroner having reviewed the whole of it to the jury they were left to consider their verdict. After an hour's deliberation they found, "That the explosion in the No. 1 pit was purely accidental; but we strongly recommend that in future when any spout hole is to be made that it be *at once* executed for the further safety of human life."

All the preceding matter I have copied from the printed report of proceedings at the inquest, and as far as I am able to judge the coroner's jury could not have made a more prudent return.

On the 21st of June a fire damp accident took place in the No. 4, or "Briggs's pit," one of the very many Tredegar collieries. Some men were badly burned; one of them (David Phillips) subsequently died of the injuries he then and there received. As disobedience of the Statute was proven I was instructed to prosecute, and the magistrate fined the Company in mitigated penalties amounting to 10*l*. No other explosion in 1871 needs any comment whatever; therefore I proceed to the second column, entitled, "Falls of coal and roof." There are several accidents under this head, which perhaps it would be desirable to describe at length; but I believe I must be content to mention but one, and that deplorable occurrence I especially select in order to record the courage and untimely fate of one of the sufferers. John Wilkins was overwhelmed by a fall in his stall in the Risca Black-vein Colliery, John Phillips, working in the next bord, rushed to his rescue, when a second mass came down and killed him, and the unfortunate men died together.

In "shaft accidents" I need but comment on a single case, and that occurred in a pit at Bedminster, near Bristol. A rude "gin" was used to lower the people down by means of a "break" on the periphery of the drum, managed by a banksman, but *no horse*. This break or clip became inoperative one dark and wet night, and a boy sitting on the lap of a collier ready to descend fell away to the bottom (about 60 yards) and was killed. Such inefficient apparatus ought never to have been used, especially as the pit possessed a steam-engine adequate in all respects to the lowering down and raising up again of the workmen, and most assuredly, whatever might have been the difference in expense, this steam power ought to have been employed that night.

"Miscellaneous Underground" is the column now arrived at. Under this head I have to quote two fatalities (as it happens this time, both in the ironstone mining department of the district). These two separate accidents and deaths were brought about by the operation of "blasting," so much commented on in all my previous reports. I insert them here in order to record my opinion that both of them arose from mismanagement or carelessness, as indeed too often has been the case in all past time.

Many more of this class, but happily of a non-fatal kind occurred in the year in the collieries of my district and also in the ironstone mines.

It is strange that with a dangerous ingredient like gunpowder there exists an extraordinary amount of indifference and carelessness in its use. All the deaths, the mutilations, the total or partial loss of eyesight by "shots underground" have no effect, nor do they appear to impart any sensation whatever of warning to our miners. The mischief, both in coal and ironstone (indeed in other mines out of the reach of the Act of Parliament), still goes on, and will do so until the new legislative measure comes into operation. Workmen may not of course know that under certain conditions powder is supposed to exercise the awfully destructive force of 40 tons to the square inch! It is not likely that they have ever gone into any such calculations; but, their own practical experience, and their own good sense should teach them that the effect of exploded gunpowder is appalling and tremendous in the extreme, and all use and handling of that compound should be exercised with the greatest care and precaution.

The next group of accidents to describe are those occurrences which in my opinion, as already stated, cannot be inserted in the Lists.

The first is a record of the death at Rhymney, on the 28th of March, of David Morgan, 13 years of age. He was in charge of a truck loaded with timber, but his foot got fast between the rails, and the front wheel so seriously injured him that he died a few hours afterwards. He was too young to have had charge of a loaded railway truck.

The second incident is of an extraordinary kind. About 4 o'clock in the morning of the 13th of April the fireman of the colliery and his assistant went down the No. 6 pit at Victoria. When 40 yards down or thereabouts a "jar" was felt, and immediately afterwards something fell into the carriage in which they were descending; they thought it was a human body, which it turned out to be. Not being well able to signal in that part of the shaft, they went to the bottom and "rapped" to be

brought up again, and then shifted the corpse on to the surface, and found it to be that of a woman, but, to their astonishment, without a head! They then made further search in the pit, and discovered the head lying on a couple of "biots" (pieces of timber) somewhat lower down than where the body fell into the cage. On examination the case became clear enough to me. The woman had fallen down the pit (which is used both for pumping and winding, therefore has many "stays" in it), but must have struck against the side and rebounded, and instead of dropping plumb to the bottom must have been caught by the pump biots and lay thereon with her head just projecting over, so that when the heavy carriage descended the "jar" the men felt was that of actual decapitation, the body dropping into the cage, and the head falling until it became entangled amongst the horizontal timber, and was there recovered, never having reached the bottom of the pit at all.

Evidence showed that this poor creature and her husband were tramps, and they had been drinking all day, when, about midnight she had gone to the pit fire for warmth, and then fallen, or precipitated herself down the shaft. A wooden flat guard was over it, but the interstices between timbers were too wide. Had the pit been entirely unprotected, I would decidedly have looked on the case as accidental, but the fact of the guardframe being on may induce the suspicion of suicide.

The third is the case of John Phillips who fell dead in a fit whilst working at the coal screens on surface at the Abercarn colliery.

The fourth is the death of a child named William Lemansley, who, whilst playing on the railway at Abersychan, was run over by the trucks and killed.

The fifth who lost his life was Henry Maddox, a person living in the Forest of Dean. On the 23rd of July he went to look for a lost sheep and did not return. Subsequent enquiry showed that on lands covering the "Standfast" Colliery gale he must have ascended a small mound so as to get an extension of view, and suddenly that elevation fell from under him, and down the pit he went and lost his life. I examined it and found it had been covered over by slabs of timber, and that again with ashes and earth. The timber was rotten with age and moisture, and no doubt gave way with Maddox's extra weight.

This deceptive fencing had been placed over the pit by former owners; those who at present possess the Standfast Colliery were not aware of its unsafe condition.

The sixth of these melancholy events was the death of a boy eight years of age, who brought his brothers breakfast into the engine-house at Abercarn; he there got entangled in the machinery and was killed. The poor child was not employed by the company.

The seventh is record of the death of William Leach, who on the 2nd of October, at Rhymney (not being then in the company's service), accompanied a breaksman on a locomotive and got killed by it.

The eighth and last is another Forest of Dean unsecured pit fatality:—John Tucker, on the night of the 14th of November, went from the "Barracks" near Moseley Green to look for some coal, and in the dark, walked right into an unfenced shaft of about 100 yards in depth. The poor man was a "navvy," working on a new line of railway now making through that part of the Forest. At the inquest Mr. Thomas Greatrex of Newport, who was proved to be one of the owners of this unsecured pit, was found guilty of manslaughter, and the case will come before the grand jury at the next Gloucester Assize, early in April, I am informed.

I may here say that the frightful manner in which persons traversing the Forest of Dean are exposed to danger by neglected pit shafts, is simply indescribable.

For years past I have been doing what I could to abate the evil, but the forest not being private property, difficulties are experienced that cannot occur in landed estates whose owners themselves grant the mineral leases. However, be that as it may, the amount of danger has culminated to such an extent, that I have been compelled to resort to steps so stringent that they may be deemed by those unacquainted with the forest to be positive measures of severity, but I regret to say that they are of paramount necessity. If all these disused pits are not "*securely fenced*," human life will become more precarious than in any other portion of Her Majesty's home dominions.

Up to the point at which this report has now arrived it is but the mere furnishing of the statistics of the district, and nothing more. I will therefore make a few observations and suggestions, as in truth is always our annual custom and duty. Without such addenda the document might fairly be considered to be one of incompleteness:

Aerodynamics may be described as that which treats on the mechanical effects of air in motion; it has its own laws, and in all subterranean pursuits, and especially and above all in coal mining they must not be disobeyed; therefore I am bound to state that, however expensive may be the provision made for the *supply* of wind to a colliery, it

will be simply money thrown away if underground passages are allowed to remain in a contracted condition. The object is, and ought to be, to get the air to the "back," or in other words to the working faces, whether near or distant; but it is of no use to attempt to do so without ample room to pass it on to the upcast. However great the power, however big the downcast and the intake, if there be not great sectional area in the "returns," the air will not go in freely unless it can freely get out again; the leakage will be terrible somewhere or other. Costly apparatus will be in vain, unless corresponding size be maintained in all air passages, downcast, intakes, thurlings, returns, upcast, and all.

Abundant ventilating power, plenty of room for air in motion throughout the pit, attention to the state of the atmosphere, good officers, and strict discipline; these are the arcana of safety underground, if indeed there are any secrets in the matter, which I very much doubt, for it is only a question of money after all.

I also venture to make the remark that another step in aid of safety, though neither scientific or technical, might be attended with important results, and that is the excision from the first general rule of the words "under ordinary circumstances;" I have long entertained a belief in the full value of the entire omission of those three words. Before leaving the subject of ventilation I may observe that in regard of calamity by fire damp the question need not always be so much dwelt upon as to "how a pit exploded" and "who fired it," but really and truly to ascertain how the gas got there, and why it was permitted to accumulate? This is, and always should be, a paramount inquiry by inspectors, coroners, and jurors.

With respect to falls of material, shaft accidents, and all "miscellaneous" occurrences underground, it is not now needful to reproduce opinions or advice on such serious subjects; all that touches on them is to be found in previous reports, both my own and those of my colleagues.

It is distressing to have to record that in the year 1871 those casualties went on with but little abatement, and, to a certain extent, they will continue. Our endeavours reach no further than mitigation; entire prevention of accident in mines is beyond our power; do what we can, we find that our designs in that respect are incomplete, and our wishes are unfulfilled. Still, I have hope that when the new Act of Parliament gets into steady operation, our Lists will moderate themselves, and give promise of a far better future.

Education amongst the mining population:—As far as any beneficial change is at this moment observable, I might, I suppose, just as well not have written this paragraph at all. Nevertheless, I reproduce it here for the purpose of expressing my entire belief in the improvement that by-and-bye must take place; the Educational Act of Parliament, with time, cannot fail to make its mark.

One great consolation remains to me, the certainty that that which I have advocated in my annual reports for years and years is at length an accomplished fact, namely, the establishment in Newcastle-on-Tyne of the "College of Physical Science."

Now, at all events, the young aspirant for the "viewership" will be able to obtain that class of knowledge which was altogether out of the reach of the generations that have passed away. Mining engineers will no longer be falling into the rear of continental nations in certain departments of science and in some of technical education.

Experience underground has long stood first and foremost in the career of our able viewers, but the time and means have now arrived for the acquirement of that amount of scientific knowledge which will constitute the best adjunct to practice; the two qualifications together leave nothing more to be wished for. Every great centre should by right possess one of those most valuable educational establishments. The underground operations of Great Britain exceed those of any other nation in the world, therefore educational means should be provided proportionate to its immense mining industry.

I have, &c.

LIONEL BROUGH.

The Right Hon. H. A. Bruce, M.P.,
Her Majesty's Principal Secretary of State
for the Home Department,
Whitehall, London.

LIST of the FATAL COLLIERY ACCIDENTS, and LOSS of LIFE arising therefrom, in the SOUTH-WESTERN DISTRICT, during the Year ended the 31st of December 1871.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost.			
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.
1871.												
Jan. 5	1	Ebbw Vale	Monmouthshire	Ebbw Vale Co., Limited	James Hatton	Collier	48	Fall of clod by a "bump" in a stall in the "elled" workings in No. 17 pit.	-	1	-	-
" 9	2	Cil Haul	Glamorganshire	Bargoed Co., Limited	David Jones	Do.	44	Fall of clod and coal in the Cwm Level on the 9th, died on the 11th.	-	1	-	-
" 13	3	Risca	Monmouthshire	T. W. Rhodes	John Morton	Do.	19	Fall of "bell mould" in the Rock vein pit.	-	1	-	-
" 17	4	Blaenavon	Do.	Blaenavon Co., Limited	Wm. Lewis	Do.	25	Fall of "bell mould" in the Hill pit	-	1	-	-
" 18	5	Writhlington	Somersetshire	Writhlington Company	James Masters	Do.	56	Coming to his work on a very dark morning he walked into the engine water pond and was drowned; the pool should have been fenced.	-	-	-	1
" 19	6	Forest of Dean	Gloucestershire	Aaron Gould and Co.	Samuel Morgan	Do.	90	Fall of roof between two joints in the Crumplemeadow colliery.	-	1	-	-
" 21	7	Do.	Do.	T. B. and W. B. Brain	Frederick White	Labourer	14	He was occupied in sanding the rails when the trams and locomotive suddenly flew off and overwhelmed him.	-	-	-	1
" 30	8	Risca	Monmouthshire	T. W. Rhodes	Geo. Barrett	Hitcher	37	A tram fell in the shaft and knocked a plank out of the bottom scaffold, and the hitcher anxious to assist, fell through the opening thus made and was drowned.	-	-	1	-
" 31	9	Mells	Somersetshire	Vobster and Mells Co.	Thomas Flower	Sinker	33	The pit was in process of deepening by sinking 50 yards beneath the bottom, and Flower was the last of three men to come up, which he did after firing a shot, and the "jack roll" brought him up those 50 yards, when he suddenly fell backwards and was killed. He should have had his leg in the loop, and he would have been safe.	-	-	1	-
Feb. 2	10	Frybottom	Do.	Rossiter and Company	Jame Curtis	Collier	50	Sudden fall of about 4 cwt. of coal	-	1	-	-
" 8	11	Blaenavon	Monmouthshire	Blaenavon Co., Limited	George Miles	Do.	21	Fall of stone in the "new slope" ($\frac{3}{4}$ coal)	-	1	-	-

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost.			
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.
1871. Feb. 20	12	Nantyglo	Monmouthshire	J. and C. Bailey	Thos. Williams	Collier	21	Explosion in the "Forge pit." He went into a stall that was known to have gas in it to get some candles, on the 20th, and he died on the 23rd.	1	-	-	-
" 21	13	Cwm Tillery	Do.	South Wales Co., Limited	Francis Bendell	Do.	40	Explosion of fire damp on the 21st, in consequence of a door being left open; Bendell was so badly burned that he died some days afterwards. There was plenty of air for all the purposes of safety if they had but minded their doors as was in fact their bounden duty.	1	-	-	-
Mar. 1	14	Coalpit Heath	Gloucestershire	Sir Greville Smythe, Bart.	Samuel Dando	Do.	15	Fell out of cage whilst descending the "Mays Hill pit."	-	-	1	-
" 2	15	Victoria	Monmouthshire	Ebbw Vale Co., Limited	Nineteen persons	lost their lives.		Explosion of fire damp (description in report).	19	-	-	-
" 22	16	Clandown	Somersetshire	Charles Hollway	Wm. Chivers	Collier	31	Fell down a "staple" and was killed. The protecting chain was not up as it ought to have been, so that Chivers and the tub went right in and down to the bottom together. Neglect again!	-	-	1	-
" 29	17	Rhymney	Monmouthshire	Rhymney Iron Company	William Rees	Foreman Mason.	50	The rope broke in the Penfedw pit, whereby a bucket of bricks fell upon him, he being then at work at the bottom.	-	-	1	-
" 30	18	Cwmbran	Do.	John Lawrence	John Stephens	Haulier	16	A tram ran wild down the engine plane and killed him.	-	-	-	1
April 5	19	Radstock	Somersetshire	Countess of Waldegrave	James Shearn	Carting Boy	18	Fall of "bell mould" in the "Tynning pit."	-	1	-	-

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situated.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost.				
									Explosion.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above Ground.
1871. Apr. 12	20	Forest of Dean	Gloucestershire	Osman Barrett	Wm. Thorney	Carting Boy	14	Going down the "Nelson pit" the band stopped, and he thought he was at the bottom and stepped out and was killed. (The boy should have been told that he was not at the bottom.)	-	-	1	-	-
" 14	21	Risca	Monmouthshire	T. W. Rhodes	Joseph Kenwyn	Slope Man	28	A broken wheel threw the trams off the rails in the "slope" and killed him.	-	-	-	1	-
" 21	22	Cwmyglo	Do.	Bedwas Co., Limited	Isaac Mathews	Sinker	24	Fell down the pit just after he had come up.	-	-	1	-	-
" 25	23	Tredegar	Do.	Tredegar Iron Co.	John Hughes	Collier	37	Fell from rope coming up. (Powder smoke too strong.)	-	-	1	-	-
May 24	24	Forest of Dean	Gloucestershire	Benjamin Davis	Noah York	Do.	21	Fall of coal in the "Cross knave" colliery.	-	1	-	-	-
" 24	25	Tredegar	Monmouthshire	Tredegar Iron Company	Frederick Snell	Do.	17	Fall of coal on the 24th of May, died on the 1st of June.	-	1	-	-	-
" 26	26	Risca	Do.	T. Wm. Rhodes	{ John Wilkins John Phillips	Do. Do.	31 21	{ A fall of coal in the "Black vein" came on Wilkins, and Phillips bravely came to his assistance, but was caught by a second fall; both were killed.	-	2	-	-	-
June 2	27	Forest of Dean	Gloucestershire	Barrett and Crawshaw	Alfred Roberts	Do.	20	Fall of roof and coals in "Foxes bridge colliery."	-	-	-	-	1
" 2	28	Mells	Somersetshire	Vobster and Mells Co.	Henry Young	Labourer	15	Fell on a pick on the 2nd of June, and received such injuries that he died on the 7th. He had been to the smiths to get his tools sharpened, and on returning to work he slipped on the rails, and the point of the pick entered his neck.	-	-	-	-	1
" 5	29	Abercarn	Monmouthshire	Ebbw Vale Co., Limited	John Prope	Collier	35	Crush of trams; he had actually gone to sleep.	-	-	-	1	-

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situated.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost.			
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.
1871. June 9	30	Easton	Gloucestershire	Leonard Boulton and Co.	John Isles	Collier	18	Coming up the pit he put his head too far out of the cage, and got caught by a byot, and was knocked out, and fell to the bottom.	-	-	1	-
"	31	Owm Tillery	Monmouthshire	South Wales Co., Limited	John Clark	Brancher	50	Killed by fall of stone	-	1	-	-
"	32	Tredegar	Do.	Tredegar Iron Company	David Phillips	Collier	28	Explosion of fire damp in the No. 4, on the 21st, which caused injury to four persons, one of whom (D. Phillips) died on the 25th.	1	-	-	-
"	33	Vartag Works	Do.	Partridge and Jones	William Roynon	Do.	43	Fall of coal and "rashings"	-	1	-	-
"	34	Abercarn	Do.	Ebbw Vale Co., Limited	James Price	Do.	51	Fall of coal by a "bump"	-	1	-	-
"	35	Forest of Dean	Gloucestershire	Parkend Company	George Price	Do.	25	Fall of roof in the "New Fancy pit"	-	1	-	-
"	36	Abersychan	Monmouthshire	Ebbw Vale Co., Limited	George Walker	Do.	14	He was descending "Cwmsychan, No. 2 pit," on the 29th of June, and had reached the bottom when a byot higher up broke and fell through the bonnet and struck his head, and of that injury he died on the 30th.	-	-	1	-
July 1	37	Tredegar	Do.	Tredegar Iron Company	William Nash	Do.	27	Explosion of fire damp in "Ty Tryst Colliery" on the 1st, which injured seven persons, of whom Wm. Nash died on the 9th.	1	-	-	-
"	38	New Place	Do.	Prothero, Brothers	David Jones	Haulier	13	Crush of trams in the "Mynyddysllwyn"	-	-	-	1
"	39	Forest of Dean	Gloucestershire	Aaron Gould and Co.	James Knight	Collier	31	Whilst taking down some coal in the "Crummeadow colliery" on the 11th, his mattock handle struck him a terrible blow, and he died on the 12th.	-	-	-	1
"	40	Lantwit and Black Vein.	Glamorganshire	Simeon Holmes	Joseph Edwards	Do.	60	Fall of top caused by two slips	-	1	-	-
"	41	Forest of Dean	Gloucestershire	Do.	James James	Do.	40	Fall of stone in "More's Level colliery"	-	1	-	-
"	42	New Place	Monmouthshire	Prothero Brothers	Rowland Williams	Do.	31	Fall of roof over "Mynyddysllwyn" vein.	-	1	-	-
"	43	Rhymney	Do.	Rhymney Iron Company	Hugh Young	Do.	20	Fall of coal by two "slips"	-	1	-	-

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situated.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost.				
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.
1871.													
July 22	44	Bargoed	Glamorganshire	Bargoed Co., Limited	Thomas Jenkins	Collier	18	Crush of trams in "Brithdir" vein	-	-	-	1	1
" 25	45	Forest of Dean	Gloucestershire	Trotter Thomas and Co.	Thomas Rudge	Engineman	36	Fell under the "quadrant" of pumping engine.	-	-	-	-	-
" 26	46	Rhymney	Monmouthshire	Rhymney Iron Co.	Thomas Evans	Collier	45	Fall of coal in "Terrace colliery"	-	1	-	-	-
" 29	47	Tredegar	Do.	Tredegar Iron Company	Wm. Ephraim	Do.	39	Fall of coal and roof in the "Ash Tree colliery."	-	1	-	-	-
Aug. 10	48	Sirhowy	Do.	Ebbw Vale Co., Limited	James John Cole	Door boy	11	Crush of trams in "No. 7 colliery"	-	-	-	-	-
" 10	49	Varteg Hill	Do.	Varteg Hill Co., Limited	Henry Marsh	Labourer	30	Crush of trucks on incline	-	-	-	-	-
" 10	50	Clandown	Somersetshire	Charles Hailway	Wm. Chedgy	Collier	40	Near an intermediate inset in the shaft, on the 10th, in coming up he tried to take off a poney's collar, but in doing so he hurt his finger, but broke no bone, and neither himself or anybody else, though there was much the matter; however, he died in consequence on the 18th.	-	-	1	-	-
" 16	51	Blaenavon	Monmouthshire	Blaenavon Co., Limited	John Jones	Do.	23	Fall of roof in "Dodd's Slope colliery"	-	1	-	-	-
" 17	52	Beaufort	Do.	J. and C. Bailey	Richard Evans	Boiler men-	27	Fell from the top of the pit framing on to the pumping engine beam.	-	-	1	-	-
" 22	53	Risca	Do.	T. W. Rhodes	W. W. Summers	Collier	12	Crush of trams	-	-	-	1	-
Sept. 2	54	Abercarn	Do.	Ebbw Vale Co., Limited	William Norris	Do.	33	Killed by fall of coal	-	1	-	-	-
" 12	55	Millfrain	Breconshire	John Jayne and Co.	Herbert Williams	Do.	28	Fall of clod	-	1	-	-	-
" 18	56	Tredegar	Monmouthshire	Tredegar Iron Co.	Thos. Jones	Do.	41	He was riding up the engine plane in "Ty Trist," when the coupling broke, and he was crushed to death.	-	-	-	1	-
" 26	57	Rhymney	Glamorganshire	Rhymney Iron Co.	James Shepherd	Do.	50	Fall of coal in the "New Dyffryn pit," caused by a "slip."	-	1	-	-	-
" 27	58	Forest of Dean	Gloucestershire	Aaron Gould and Co.	Joseph Carter	Labourer	34	Fell from a railway truck on the company's road at the "Crummymeadow colliery."	-	-	-	-	1
" 30	59	Gwrhay	Monmouthshire	Roger Lewis	Lewis Edwards	Collier	50	Fall of roof over "Mynydddyallwyn vein."	-	1	-	-	-

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situated.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost.				
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.
1871. Oct. 11	60	New Tredegar -	Monmouthshire	George Elliott and Co. -	Thos. Trollop -	Collier -	35	Crush of trams on the 11th; died on the 23rd.	-	-	-	-	-
" 16	61	Braysdown -	Somersetshire -	Braysdown Coal Co. -	Edward Turner -	Carting boy -	14	Fall of stone after a shot was fired	-	1	-	-	-
" 24	62	Rhymney -	Glamorganshire	Rhymney Iron Company -	Samuel Roberts -	Haulier -	21	Crush of trams in the "New Dyffryn pit" whilst "backing" a journey of loaded trams down a cross heading; he died immediately after amputation of his leg. The "cross heading system" is too liable to this class of accident.	-	-	-	1	-
Nov. 10	63	Foxcote -	Somersetshire -	Writhlington Company -	James Swift -	Sinker -	31	Coming up the shaft, standing on edge of the hudge, he lost his hold, and though he only fell seven yards he was killed. He would have been safe enough if he had got into the hudge.	-	-	1	-	-
" 15	64	West End Pit -	Do. -	Henry Bennett -	George Chilcot -	Collier -	14	Fell away in going down shaft -	-	-	1	-	-
" 20	65	Beaufort -	Monmouthshire -	Nantyglo Co., Limited -	Wm. Davis -	Do. -	45	Fall of roof -	-	1	-	-	-
" 20	66	Glyn Pits -	Do. -	Ebbw Vale Co., Limited -	John Jenkins -	Do. -	19	Fall of roof on the 20th, died on the 21st.	-	1	-	-	-
" 24	67	Forest of Dean -	Gloucestershire	T. B. and W. B. Brain -	George Jenkins -	Hodder -	18	Fall of roof by slant in the Trafalgar colliery.	-	1	-	-	-
Dec. 5	68	Sirhowy -	Monmouthshire	Ebbw Vale Co., Limited -	Evan Lewis -	Collier -	30	Fall of coal in "No. 4 colliery"	-	1	-	-	-
" 9	69	Victoria -	Do. -	Do. do. -	George Yemm -	Timber man -	40	Fall of roof in "No. 6 colliery"	-	1	-	-	-
" 16	70	New Tredegar -	Do. -	George Elliott and Co. -	James Dando -	Collier -	27	Fall of stone -	-	1	-	-	-
Total									23	35	14	11	6

Total number of deaths - - - 89.

List of Fatal Colliery Accidents—*continued.*

RECAPITULATION.

Total number of separate fatal accidents in 1871	-	-	-	-	-	70
Total number of persons killed by those 70 separate accidents	-	-	-	-	-	99
Whereof	28	deaths	were	caused	by	explosion of fire-damp.
"	35	deaths	were	brought	about	by falls of coal and stone.
"	14	deaths	took	place	in	pit shafts.
"	11	deaths	arose	from	miscellaneous	causes underground; and
"	6	deaths	occurred	on	the	surface.
Total	-	89	deaths,	as	enumerated	and described in the List.

COMPARATIVE TABLE OF THE LAST FOUR YEARS.

In 1868,	1	person	lost	his	life	by	explosion	of	fire-damp; whilst, during the whole of the same year, the total number of deaths from all causes (including fire-damp) were	-	-	-	-	-	-	61
" 1869,	23	"	"	"	"	"	"	"	"	"	"	"	"	"	"	68
" 1870,	3	"	"	"	"	"	"	"	"	"	"	"	"	"	"	51
" 1871,	23	"	"	"	"	"	"	"	"	"	"	"	"	"	"	89

NON-FATAL ACCIDENTS IN COAL MINES, OF WHICH WRITTEN "NOTICES" WERE RECEIVED THROUGHOUT THE YEAR 1871 = 132.

These 132 occurrences were attended with injury to 157 persons employed in the district in manner as tabulated below:—

There were 16 accidents by fire-damp,	whereby 31	men and boys	were	burned, contused, or hurt.
" " 66 " by falls of coal and stone,	" 74	"	had	bones fractured, or were otherwise injured.
" " 6 " in pit shafts,	" 7	"	severely	suffered.
" " 36 " from miscellaneous causes } underground - - }	" 37	"	became	incapable of earning wages for some considerable time.
" " 8 " on the surface	" 8	"	were	more or less wounded or hurt.
<u>132</u> accidents.	<u>157</u>	persons	suffered	injury.

Some of the above are at work again; others are still unable to return to their avocations; and some few remain seriously afflicted.

LIONEL BROUGH,
Inspector of the Coal Mines of the District.

LIST of the FATAL IRONSTONE MINE ACCIDENTS, and LOSS of LIFE arising therefrom, in the SOUTH-WESTERN DISTRICT, during the Year ended the 31st December 1871.

Date.	No. of Accidents.	Name of Mine.	Where situated.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost.			
									Explosions.	Falls of Roof and Ground.	In Shafts.	Miscellaneous.
1870. Feb. 7	1	Frampton Cottrell.	Gloucestershire	Brogden and Sons -	Jno. England	Miner	40	Premature explosion in "blasting" <i>Note.</i> —I am inclined to think that it was change of proprietorship which caused this accident to be omitted in its proper year.	-	-	-	1
1871. Jan. 20	2	Tredegar -	Monmouthshire	Tredegar Iron Company -	Thos. Jones -	Do.	55	Fall of roof in the "Viaduct level" in the Red vein.	1	-	-	-
Feb. 10	3	Rhymney -	Do.	Rhymney Iron Company -	Benj. Jones -	Do.	27	Shot went off too soon; most likely by his own mismanagement. It happened in the Blue vein in the "Gwain Fawr pit."	-	-	-	1
Mar. 30	4	Do.	Do.	Do. do.	Jno. Watkins -	Do.	37	Fall of stone in the Rosser vein in the "Piedwallt pits" on the 30th of March; died on the 5th of June	1	-	-	-
Apr. 1	5	Blaenavon	Do.	Blaenavon Co., Limited	Francis Williams -	Engine man	47	Fall of roof in the "Coity pits" -	-	1	-	-
" 19	6	Nantyglo -	Breconshire	J. and C. Bailey -	Geo. Palmer -	Miner	24	Fall of stone in the "tunnel pit" -	-	1	-	-
Aug. 30	7	Varteg -	Monmouthshire	Partridge and Jones -	Jno. Williams -	Road man	45	Fall of stone, 30th August; died 1st September.	-	1	-	-
Sept. 12	8	Rhymney	Do.	Rhymney Iron Co.	David Evans -	Do.	76	Overwhelmed by mine trucks on the surface, on the 12th September, and died on the 16th. Too old for such dangerous employment.	-	-	-	1
Oct. 21	9	Tredegar -	Do.	Tredegar Iron Company -	Wm. Owen -	Miner	63	Fall of roof in "No. 5 pit" -	-	1	-	-
" 24	10	Ebbw Vale -	Do.	Ebbw Vale Co., Limited -	Geo. Francis -	Do.	20	Fall of mine ground in the "Gantze pit."	-	1	-	-
Nov. 6	11	Frampton Cottrell.	Gloucestershire	Brogden and Sons -	Wm. Barrett -	Do.	41	Heavy fall of iron ore -	-	1	-	-
									0	8	0	2
												1

Total number of deaths and accidents - 11.

List of Fatal Accidents in Ironstone Mines—*continued.*

RECAPITULATION.

Total number of separate fatal accidents in ironstone mines reported to me in the year 1871 - 11

Total number of persons killed by those 11 reported separate accidents - - - 11

Whereof 8 deaths resulted from falls of ground and ironstone in the various mines of the district.

„ 2 deaths from miscellaneous causes underground.

„ 1 death happened on the surface.

11 separate accidents, with 11 resulting deaths, as enumerated and described in the List.

COMPARATIVE VIEW OF THE LAST FOUR YEARS.

In 1868, the total number of persons who lost their lives from every cause incidental to ironstone mining, amounted to	-	-	-	-	-	-	16
„ 1869,	„	„	„	„	„	„	8
„ 1870,	„	„	„	„	„	„	12
„ 1871,	„	„	„	„	„	„	11

LIST OF NON-FATAL ACCIDENTS IN IRONSTONE MINES.

12 falls of material underground	whereby 12 persons were injured, some severely
1 shaft accident	„ 1 person was badly wounded.
6 miscellaneous accidents underground	„ 6 persons suffered, principally by “shot firing.”
1 surface accident to an engineman	„ 1 who had one of his arms torn from his body and left in the fly wheel pit.
<u>20</u> separate accidents, occasioning bodily harm to	<u>20</u> men and boys.

LIONEL BROUGH,
Inspector of the Ironstone Mines of the District.

Mr. Baker's Report.

REPORT ON the INSPECTION OF MINES in the SOUTH STAFFORDSHIRE AND WORCESTER-SHIRE DISTRICT, for the Year ended the 31st December 1871. — By J. P. BAKER, Esq.

SIR,

Wolverhampton, February 28th, 1872.

PURSUANT to the statute I have again the honour to transmit my report on the inspection of mines for the year 1871, together with a "list" of the fatal accidents which have occurred during the year in question, showing when, where, and how they respectively happened.

The "list" in the aggregate exhibits, I am sorry to have to say, no diminution in the number killed when compared with that for the year 1870, owing to the very unusual fatalities which happened at the High-Bridge and Black-Lake Collieries, and which carried off eleven persons,—three at High-Bridge and eight at Black-Lake,—thus bringing up the death-rate to 84, being two in excess of the number recorded for the previous year.

Had we been spared these *really* exceptional catastrophes, my annual report would, as it has done for several years past, still have shown a steady and marked decline in the sacrifice of human life in working the coal mines of the South Staffordshire division, which decline will at once appear by a glance at the tabulated statement below. There is, therefore, much to be thankful for, especially if we take into account the great increase in the size of some of the collieries, the out-put of coal, and the addition of several *thousands* to the ranks of the working miners and others employed on and about the collieries of this district.

During the year 1871, the confidential returns of the coal trade, together with my estimate (1,350,000 tons) for waste, colliery consumption, and colliers' allowance coal, and also my estimate of 20 per cent. as the difference between statute weight and the commercial weight of the district, enable me to state that 10,500,000 tons have been raised in this inspection division, which slightly exceeds the out-put of the previous year.

Results of the Inspection of Mines.

Since the Inspection Act came into operation, much has been said and written on the subject by legislators, inspectors of mines, and others conversant with mining, which, however, I need not mention here. For after all it comes to a simple question of fact, and that is,—What are the results of the working of the various Acts of Parliament during the period over which they have extended?

So far as this Inspection District is concerned, the question is answered by the following tabulated statement already referred to.

Tabulated Statement.

	Explosions.	Falls.	In Shafts.	Miscellaneous.	Above Ground.	Total.
Annual average from the commencement of inspection of mines 1850 to 1855 inclusive - -	18	106	40	14	0	178
Annual average from 1855 to 1860 inclusive - - -	16	87	35	9	0	147
Annual average of the first 10 years to 1860 inclusive - - -	17	96	37	11	0	162·5
Annual average from 1860 to 1871 inclusive - - -	9	57	23	12	3	105·7
Loss of life in 1871 -	6	40	10	25	3	84

Coal miners employed as per census of 1861	- - - 25,235	Estimated amount of coal raised	- - - 8,250,000	Tons.
Coal miners employed as per estimate, and returns by the coal trade, 1871	- - - 31,000	Coal raised	- - - 10,500,000	Tons.

The above statement requires no comment from me as the figures speak for themselves, and I venture to assert prove that at least to some extent, inspection has realized the object which the Legislature has from time to time had in view in passing the various enactments for the regulation and inspection of mines.

Notwithstanding this great diminution in the death-rate, it should be borne in mind that the quantity of coal annually raised has increased to the extent of thousands and *millions of tons* during the respective periods to which the statement refers, as well as an increase of from eight to *ten* thousand in the number of persons employed, which increase will, as time goes on, be further augmented.

Before leaving the subject in relation to the tabulated statement, I would further observe that if the provisions in the new Inspection Bill now submitted to Parliament become law, together with the establishment of an improved code of special rules, the loss of life in coal mines will, I feel satisfied, undergo further decline.

Much, however, will depend, not only upon the due observance of the law itself, but the kind of discipline brought to bear underground, which, I would here state, should be of the very best description—otherwise, so far as it relates to the majority of accidents, any very great improvement is, I fear, really and truly hopeless. And what I said on this subject in my report of last year I do not hesitate to advert to again; that is, that neither the colliers nor the public must look to increased government inspection as the only means to bring about this desideratum; for, the reduction of preventible accidents will in the future, as it has done in the past, depend upon the hearty cooperation of the miners with the managers in carrying out the requirements of the law, together with a thoughtful and careful supervision, on the part of one and all, of the daily, and in some cases hourly, changes to which the condition of the underground workings of every mine are subject. Many of these occur and recur during any one shift, day or night, on which the miners may be employed. Therefore it is evident that a mine may, upon the day of inspection, be found in safe working condition, and the next morning its state may be just the reverse, and indeed it might and undoubtedly has many times undergone great change even before the Inspector has left the colliery. Consequently, it unquestionably shows how very much the general safety of the underground workings depends, not only upon the vigilance of those persons in charge of the pit, but of the workmen themselves, who, of all others, are generally speaking more exposed to and likely to timely discern those changes which come within the reach of and are subject to human control.

Penalties.

With your sanction proceedings for violation of the provisions of the Mines Regulation and Inspection Act have been taken against the following persons and penalties imposed, namely:—

M. Fletcher, agent, Salt Wells Colliery, for violation of general rule 1	- - - - -	£	s.	d.
S. Patten, Owner, Reeds Wood Colliery, for violation of general rule 4	- - - - -	5	0	0
J. Dutson, Owner of Reeds Wood Colliery; violation of general rule 4	- - - - -	0	15	0
P. Hicken, Owner of the Red Hill Colliery; violation of general rule 4	- - - - -	0	10	0
Wolverhampton and Walsall Railway Company, owners of a pit shaft in the Rye Croft Colliery; violation of general rule 4	- - - - -	10	0	0
B. Johnson, owner of the Hockley Colliery; violation of the 8th section of the 5th & 6th Vict. cap. 99	- - - - -	0	5	0
P. Shaw, agent of the Buffery Colliery; violation of the 1st general rule	- - - - -	20	0	0
J. Southan, owner of the Wall Butts Colliery; violation of the 4th general rule	- - - - -	10	0	0
W. Beardmore, charter master, Gospel Oak Colliery; violation of special rules	- - - - -	1	0	0
	- - - - -	0	10	0
	- - - - -	£48	0	0

On what
any great
decrease in
the loss of
life depends.

Uncertainty
of the con-
ditions of
mines.

The proceedings instituted against the agent (Mr. Turner) of the Park Head Colliery for violation of the 1st general rule in the year 1870, and referred to in my last annual report, were resumed in the early part of last year, and the case came before Mr. S. D. Fereday, Mr. J. R. Tilley, and Mr. R. Jobson at the Dudley Police Court, on the 24th February 1871.

As this case is one of unusual importance I consider it necessary at this stage to make a few observations thereon. And I have to state in the first place that after my solicitor had opened the case, the defendant's attorney objected to its being proceeded with on the ground that six months had elapsed since the commission of the offence, and that the magistrates had therefore no jurisdiction. This objection, however, as the information had been duly laid, was overruled.

It is quite true that a considerable time had elapsed, which was owing to the long correspondence with the Home Office authorities respecting the jurisdiction of the Stourbridge Bench on the one hand, and, what it is only fair to state, the correspondence also between one of the owners, Mr. J. E. Swindell, a justice of the peace for Worcestershire, his reputed agent; Mr. John Aston, mining engineer and a justice of the peace for the borough of Dudley, and my solicitor on the other; which latter correspondence I may say extended over a period of about eight weeks before the said owner and agent came to a final decision with my solicitor as to somebody, in the shape of an agent, on whom the responsibility for the observance of the law should rest. In proof of this it may be well to state that on the 20th of August 1870, Mr. Swindell wrote to my solicitor, Mr. Walker, to say that Mr. John Aston, of Blower's Green, Dudley, was the agent of Park Head Colliery. After a further letter on the subject from Mr. Walker, Mr. Swindell again wrote on the 12th October 1870, as follows:—

Difficulty experienced in some prosecutions.

"I beg to say that Mr. Aston is the Mining Agent of Park Head Colliery." "He receives his salary and gives receipts. As for superintending the underground workings of Park Head Colliery, Mr. W. Turner is his agent and assistant visiting the colliery, and directing the workings."

"With these facts you will know who to summons. I suppose you will have to call me to prove the agency unless it would suffice for my clerk, Mr. Thomas Phillips, to attend and produce the receipts."

Yours truly,
J. E. SWINDELL.

Mr. Aston, having repudiated under Mr. Swindell's letter of August 20th, all responsibility, my solicitor wrote to him on the 15th October 1870, respecting his agency as declared by Mr. Swindell, to which letter he replied on the 18th of that month to the effect that "William Turner superintends the underground workings of Park Head Colliery. Consulting me weekly whenever necessary with Mr. Swindell. Performing all the duties and accepting all the responsibilities attaching to the appointment of agent. And that it is surprising to him that my name should be brought in, since the question of salary is one purely between Mr. Swindell and myself, and ought not to involve me personally."

Mr. John Aston's explanation.

In consequence of this reply Mr. Walker, on the 20th October, again wrote to Mr. Swindell, sending him a copy of Mr. Aston's letter, to which Mr. Swindell wrote the following answers:—

Dear Sir,

October 20th, 1870.

I am in receipt of your favor for which I am obliged. I will see Mr. Aston, when I will write you again with definite information for your guidance.

Yours truly,
J. E. SWINDELL.

Thos. Walker, Esq.

Dear Sir,

You will please consider Mr. William Turner as agent of the Park Head Colliery.

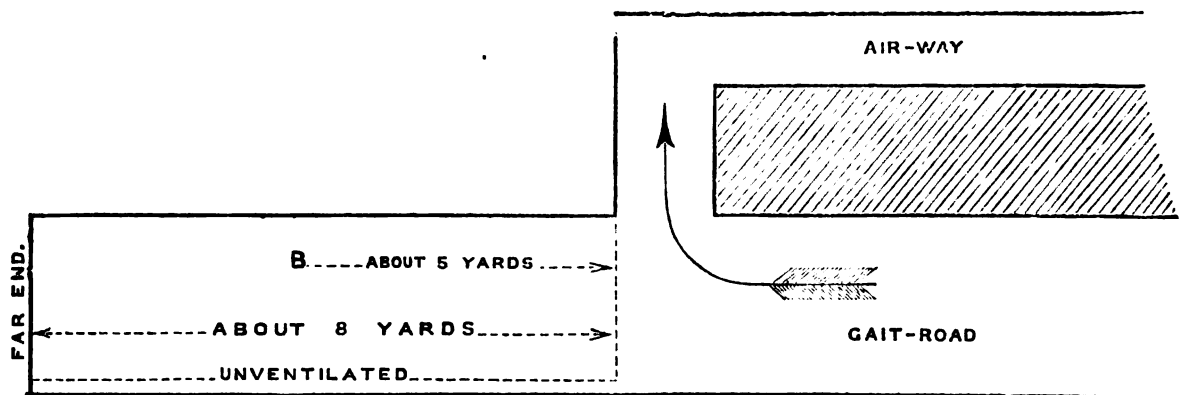
If you summons him *there will be no question raised* on this point, consequently no *difficulty*. I thank you for your kindness in the desire not to cause me any annoyance.

An agent at length decided upon.

Yours truly,
J. E. SWINDELL.

Stourbridge, October 21st, 1870.

To resume, however, I would first call attention to the accompanying sketch of the mine which shows the headway or gait-road where the boy lost his life, and also the mode adopted for ventilation, which at once shows that it was not carried to, or, even near the far end.

Sketch of the workings where the Boy lost his life in the Park Head Colliery.

The Dead Body of the Boy was found at letter B. The Arrow shows the direction of the Air-current.

The first witness called at the hearing was Samuel Rogers, who stated that the dead body of the boy was found four or five yards from the nearest air-drift, and that the choke-damp (carbonic acid gas) was at this point two feet thick above the floor of the mine, and the candle had to be held as high as his head. The headway was clear in the morning, and also at 10 o'clock.

William Jones, the doggy of the pit was then called, and deposed that the boy was found about four yards beyond the air-way, and that he was afraid to hold the candle lower than his shoulder. "He thought if he put it lower his candle would go out, and they (himself and Jones) be left in the dark with the boy."

These witnesses also clearly proved that no steps were taken to ventilate the headway in question, and that the dead body of the boy was found about five yards beyond the nearest air-way, and that he was killed by an accumulation of carbonic acid gas. In the face of these plain facts, and with the "*plan*" of the mine before them, the Bench (in the person of Mr. Fereday) said, "It is to be regretted that the boy lost his life in this pit, but the magistrates do not consider the case proved, therefore they dismiss the charge against the Defendant."

This decision called up my solicitor, Mr Thomas Walker, who stated that, there was gas in the place, no matter whether it was two feet or ten feet. The facts given in evidence showed that the mine was not properly ventilated, and although the gas was but two feet thick on the floor of the mine, it existed in deadly quantity, and the boy lost his life. If under these circumstances the Bench considered they were bound to dismiss the summons, he ought to have a case for a higher Court. This the Bench afterwards granted; and, in due course, it came on for argument in the Court of Queen's Bench before the Lord Chief Justice, Mr. Justice Blackburn, and Mr. Justice Mellor, on the 11th of November last, and the report in the Times states,

After some discussion, the Lord Chief Justice said, "The question was, whether proper care had been taken in the ventilation of the mine, and that was a question of fact for the magistrates." It was for them to determine the case on the merits, and they had done so in favour of the Defendant.

Mr. Justice Blackburn concurred. The magistrates, he said, could not convict unless they found as a fact that such means as would ordinarily be sufficient had not been used. But they had found the contrary, and in the face of such a finding, it was impossible that this Court could say they were bound to convict. There was no evidence to show that under ordinary circumstances the agent was bound to contemplate the possibility of choke damp at the time and place in question.

Mr. Justice Mellor also agreed. If the magistrates had found the other way the Court would not have reversed their decision, but as it was they could not reverse it. Appeal dismissed."

Explosions of Fire Damp.

Referring again to the "List" of deaths, which, as before stated, number 84, I have to observe that 6 were caused by explosions of fire damp, 40 by falls, 10 in shafts, 25 miscellaneous underground, and 3 on the surface.

Of the six miners killed by explosion of fire damp, one only was killed on the spot. The other five, after lingering some days, died at their own homes. None of the six cases, however, present any important feature beyond the fact that, with the exception of one—

a boy,—all of them might, with ordinary care and due attention to simple precautions, have prevented the accidents which subsequently proved fatal to them.

Falls Underground.

Of the 40 persons who lost their lives through *falls* 30 were killed on the spot, and 10 died away from the mine. A large proportion, as usual, fully one half, of the entire number, were pikemen, (coal hewers), who, if they would avail themselves of the advantages at their command, have greater facilities for securing their own safety than any other class of workmen employed underground. Nevertheless, many of their number neglect them, and thereby frequently fall victims to their own disobedience and indiscretion. Others, however, of the same class, are often, and without a moment's warning, struck down where danger was least to be apprehended. The 40 fatal events call for no special remark other than appears in the "List" appended hereto.

Prominence has been given again and again to this subject in my former reports—describing the cause to which this class of accidents is for the most part mainly due, and also how, in my opinion, the number might be still further reduced. I cannot, however, allow this opportunity to slip without again making a few observations on the subject, for, I regard it as one of the greatest questions with which the mining portion of the community of this country have to do, not even *excepting* explosions of fire damp, which every now and then, and at one fearful stroke, make such lamentable and terrible havoc in the ranks of our colliers. In confirmation of this statement it only remains to be mentioned that the number of deaths from *falls* in working the coal mines of the United Kingdom exceeds by hundreds that caused by explosions. Indeed, it approaches nearly 50 per cent. of the entire death-rate, and loudly calls, not only for some explanation, but also for some means to be devised with a view to diminish this great source of mortality.

I have for many years carefully watched this subject, and not only this, but I may also say every other belonging to coal and iron-stone mining, and, after upwards of 37 years' experience in nearly every capacity appertaining thereto, I have come to the conclusion that unless some regulation be embodied in an Act of Parliament, or a suitable clause inserted in the special rules of every colliery thereunder, having for its object a defined and compulsory mode of timber propping, any great improvement will be looked for in vain.

It should be stated, however, in fairness to the employers that the deaths through falls are due to a considerable extent to the carelessness and indifference of many of the workmen themselves, in neglecting to properly sprag and set timber props, also to some of the underlookers or underground managers, in not seeing that a good and constant supply of timber is kept always in the mine, and likewise in not seeing to its proper application and removal. Nevertheless, I feel it to be my duty to say that, when everything that science and human foresight can suggest has been carried into effect, it will never bring about complete immunity from such accidents. During the last 11 years I have never ceased to urge upon the owners, agents, and the colliers the great desirability of an abundant, systematic, and proper use of timber; which I am glad to be able to say has, to a considerable extent, been complied with, and to which the great diminution in the loss of life in this inspection division is, undoubtedly mainly due. This happy state of things, however, may I fear, again change for the worse unless some compulsory regulation be established.

As a means to this end, in addition to the special rules, a sub-rule has been adopted at several collieries in this district compelling the charter-master to prop with timber at intervals of *five* and *six* feet respectively, whether the workings appear to require it or not—and this is the mode, or some other (equally good) which I think it would be well to enjoin on the owners, agents, or managers of every colliery—thick seams worked beyond the practical use of timber only excepted—which regulation, however, will never be carried into effect unless rendered compulsory by statutory law; although the life or death of many of our fellow creatures certainly depends in a great measure thereon, to say nothing of those seriously injured and, in many cases, maimed for life.

Shaft Accidents.

The loss of 10 lives only in the working pit shafts of this district is the lowest on record; and, as the tabulated statement shows, has again undergone a most remarkable decline. It would have been four less if the top or mouth of the "pit-shafts"

Accidents by falls underground, one of the most momentous questions of the day.

Some regulation to enforce a systematic use of timber absolutely necessary.

The sole cause of many deaths through falls.

How a better state of things has been brought about.

Thick seams worked beyond the practical use of timber cannot be supported.

Great decrease in shaft accidents.

had been, as they are in all well-regulated collieries, protected by lifting wickets, or, the well-known, and in some places appreciated travelling fence.

One case only seems to require any special notice, No. 18 in the "list," which happened at the Goscote Hall Colliery. On the day in question, the colliery engineer and several other persons were engaged changing the "pump bucket," and doing other repairs in the shaft. During the day a considerable quantity of *beer* had been consumed on the spot by these workmen, in addition to which, last of all and worst of all, it is stated that the deceased, a stranger, and the engineer descended the pit to complete the work, taking with them a quantity of *rum*, and, as might have been expected, considering the circumstances, the "stranger" fell out of the "bowk" whilst ascending and was killed, the lamentable and sad result of drunkenness. The allowing of an immoderate supply of drink to workmen employed in collieries is most reprehensible by whomsoever tolerated. In this case, however, it is due to the agent to state that he was ignorant of the undue quantity brought to the works. The engineer alone was the man to blame in this instance, and narrowly escaped a similar fate to that which befell the deceased.

The sad end
of a day's
drinking
whilst at
work.

Miscellaneous Accidents.

The fatal events under this head (25) are nine more than appears in the list of 1870, which is owing to the two lamentable accidents already referred to in the early part of this report which happened at Highbridge and Black Lake collieries. These and the fatal accidents by "trams" and "tubs" are the only cases to which I deem it necessary to allude.

The Highbridge catastrophe, No. 22 in the list, is happily one of very rare occurrence, and it was fortunate that so few perished thereby, as four times their number were engaged in different parts of the workings at the time, and barely escaped with their lives; for, before the last group of them could reach the bottom of the shaft, the "sand" and "water" which had rushed in through the roof of one of the headways, far away from the pit shaft, overtook and nearly overwhelmed them on their way along the main road to the pit bottom, where they arrived just in time to catch the cage, and thus saved their lives. A moment longer would have been too late, as was evidenced by the fact that when the cage was again lowered for the three missing men the rush of *sand* surrounded and covered it, holding it so fast that the whole power of the winding engine was inadequate to lift it. The sand thus sealed the pit bottom, cutting off all communication with the unfortunate men below. Besides which, the "sand," &c. had by this time found its way into the pumping pit, which it filled from the bottom about 16 yards, choking the pump and rendering it useless.

Efforts were, however, at once made to draw the water with sinking "bowks" (large iron buckets), but without any appreciable success.

The pumps were at length got to work again, but owing to the sand and mud which continually flowed into the pipes, the work was frequently interrupted, thus retarding all attempts to get into the mine. The operations were painfully slow and, what I am sorry to have to say made matters worse, the men struck for higher wages; and, strange to state, one of the first to do so was a *brother* of one of the *entombed* men.

All efforts to
recover the
bodies
relinquished
by the owner.

After several weeks of slow and fruitless attempts by the owner (Mr. E. Crapper) to get into the mine, he (Mr. Crapper) came to the conclusion, which he publicly made known at a meeting convened by the vicar of Pelsall, held in the schoolroom belonging to the church, that he could not proceed any further in his efforts to re-open the pit and recover the bodies. At the meeting in question it was unanimously agreed that the recovery of the bodies was feasible, and that some effort should be made to raise the necessary funds for executing the work.

How the
necessary
funds were
raised.

A committee of mining engineers was at once appointed and it was, on my suggestion, then resolved that an appeal should be made and confined to the coal and iron trade of the districts. Circulars were accordingly issued and to some extent responded to, which at length brought in the required amount, enabling the committee to commence operations. The workmen had not proceeded far when it was discovered that the headway was choke-full of sand and gravel, and, as was afterwards found to be the case throughout its entire length, leaving, however, a short distance at the far end where the deceased men were at work at the time of the accident, quite free.

In this part of the mine the bodies were expected to be found. The searchers, however, were disappointed, and soon perceived that the men, while living, had knocked out a "dam" and pushed on into a very narrow place in an old side of work with a view to

escape the rush of water, which threatened to destroy them in the main headway, where, however, they perished one upon the other, and so tightly were they wedged in under the sand that the coal had to be cut away before their dead bodies could be released.

The cause of this sad accident was a superincumbent stratum of sand and gravel full of water, under which one of the headways had been driven in the shallow coal, forcing its way through the roof, and must have been in close proximity to the seam of coal without either the owner or agent knowing or suspecting anything whatever of its whereabouts.

Immediately after the dreadful occurrence a large crowning-in of the surface from 30 to 40 yards diameter was discovered 300 yards from the pit, which left no doubt on the minds of every person conversant with the subject that the quantity of sand and gravel which had rushed into the mine had choked up every excavation, and thus deprived of life every person and living thing therein.

The Black-Lake Colliery "thick coal" pit accident, No. 64 in the "list," was more fatal than the one which happened at Highbridge Colliery, and the most destructive one which I have to notice during the year under review. Indeed, it may be stated that it is not only unusual in its character, but also in point of number.

On the night before the accident seven men and a boy descended on the night shift and proceeded to their respective place of work, leaving on the surface an engine-man and watchman in attendance over them.

Nothing unusual occurred during the night to attract the attention of either until about five o'clock next morning, when one of the workmen (the horsekeeper) descended, and on reaching the bottom of the shaft found it, and every place near, full of suffocating smoke, from which, to save his own life, he had to flee and return to the surface, where he lost no time in making known the sad calamity which had so unexpectedly happened.

Messengers were quickly despatched in all directions to the managers and other persons belonging to the works, where they soon arrived and made every attempt to explore the mine, but, owing to the dense volume of smoke which for hours met the downcast current of air, their efforts were all in vain.

On receipt of a telegram from the manager I hurried off to the colliery, where I arrived about 12 o'clock, and was in the mine with Messrs. Field and Lawley by 12.30; but the choke-damp and smoke were so prevalent that it could, with any degree of safety, only be breathed for a few minutes at a time. It was then quite clear that a very extensive and active fire was raging, cutting off all communication with the unfortunate workmen. It was evidently consuming everything in and around the gait-road, and threatened every moment to break out and destroy the air-way. Nevertheless, relays of men were employed during the day in vainly attempting to extinguish the fire, in addition to which *L'Extincteur* apparatuses were brought to play upon the burning mass; but in spite of these means (although with some advantage) the fire still maintained its ground from the top to the bottom of the gait-road.

The advantage, however, derived from these apparatuses kept the fire at sufficient bay to enable the workmen (explorers) to commence driving a headway at six o'clock in the evening, with a view, if possible, to get round and intercept the fire. By three o'clock next morning it had been driven about 15 yards, and a communication made with one of the stables adjoining the gait-road and the in-take air way, along which the smoke and deadly gases were fiercely rushing, defying every attempt either to penetrate or safely approach them.

One of the horses was discovered, though dead, of course.

The choke-damp and smoke very soon began to find their way into and along the newly driven headway in the opposite direction to the air-current, although air-pipes in this and the gait-road were employed. This state of things got worse and worse till five o'clock on Friday evening, when I, in company with several mining engineers, and some 15 workmen, including the father and two or three other of the relatives of the deceased men, (all of us being in the mine at the time) found it not only impossible, but positively unsafe to continue our efforts any longer. I was one of the last who went up to the "dam," where the lights were extinguished, and so rapidly were the deadly gases and smoke pushing upon us, that some time before all the explorers were out of the mine, the smoke had reached the Downcast-pit bottom, notwithstanding that the full force of all the ventilation was brought to bear against it.

It was then decided to close the pits with a view to extinguish the fire.

On the 18th December last they were re-opened, and the bodies, after two or three days of anxious and difficult labour, were found in the gait-road, about 200 yards from the pit shaft, and such a life-like appearance did the bodies present, that at first sight they seemed more like living men. There were no indications whatever of any suffering or

death struggle—no contorted features—and not so much as a disturbed muscle. Their appearance, and the place where they were found, fully bore out the expressions of opinion of every person in any way conversant with the subject. There can be no doubt, therefore, that the eight unfortunate miners were suffocated whilst asleep, unconscious of the deadly atmosphere which proved fatal to them.

When the ventilation of the mine had been restored and the workings admitted of a complete inspection, it was evident that the “fire” had prevailed in and about one of the stables, and continued its course along the gait-road in the direction of the eight miners for about 9 or 10 yards, consuming, for the most part, everything within its reach. It let down the roof, partially stopping the ventilation, and thus prevented the mine becoming, from such a cause, one of the most complete wrecks on record, and very probably, the consumption of the bodies of the dead men.

The conclusion come to by the mining engineers and others called in to examine the pit was, that the origin of the “fire” was due to the careless or inadvertent act of the deceased workmen, and most likely “Plant” (the horse fettler) by leaving a lighted candle in or near the stable which either burned down to, or fell among the hay and other combustible matter, and thus kindled the fire which brought about so much destruction and death, in which opinion, after a very careful inspection of the mine, I fully concur. This shows the sad result of workmen leaving their place of employment and all falling asleep; to say nothing of the two sufferers who were paid to look after the other men, and were left for the night in care of the pit.

Had one of their number kept awake they might have all been got out of the pit, and their lives spared.

Accidents by Trams and Tubs.

Accidents by “trams” and “tubs” are increasing in this district, which I attribute to some extent to the great increase in the number used, for there are hundreds now where there only used to be scores. And, unless the horse-drivers and “tub” runners obey more strictly the orders and regulations enjoined, the number will, I fear, as the large collieries increase, undergo further augmentation.

Education.

With regard to the education of collier boys I have nothing new to report, nor do I see any reason to change the opinion I have repeatedly given in former reports. I would simply add, however, that in the event of the educational provisions of the new Bill becoming law, I hope they will be met and appreciated, not only by colliery owners and agents, but the colliers themselves, and not be regarded as those contained in the Act of 1860 were, for, speaking of this district in particular, the provisions have for the most part been a dead letter.

Several persons have during the year lost their lives on or about the collieries of this district, but as they were not employed thereon, they are not comprised within the scope of the Mines Inspection Act, and therefore have no place in the returns.

A case which occurred at the Cannock-Chase Collieries should be mentioned.

On the 29th of August, a man named Gilbert was found dead at the bottom of an underground shaft, and it was supposed at the time that he had been improperly standing in the bottom, and was accidentally struck by a piece of rock falling from an ascending skip. An inquest was held in due course, and a verdict of accidental death returned.

However, after the lapse of several weeks, a fellow-workman named Henry Jackson confessed that he struck him with a pick and killed him. Jackson was afterwards taken before the magistrates and committed to gaol on a charge of wilful murder, and was arraigned at the last Stafford winter assizes and acquitted.

Ironstone Mines.

Three deaths, the result of accident in these mines, are recorded in the “list” for the year under review; none of which, however, require any special notice, as they are sufficiently described in the said “list” at the end of this report.

I have, &c.

JAMES P. BAKER,
Inspector of Mines.

To
The Right Honourable
Henry Austin Bruce, M.P.,
The Secretary of State
For the Home Department.

LIST of the FATAL COLLIERY ACCIDENTS, and Loss of LIFE arising therefrom, in the SOUTH STAFFORDSHIRE AND WORCESTERSHIRE DISTRICT, during the Year ending 31st December 1871.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost.				
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.
1871. Jan. 3	1	Prince of Wales	Dudley	E. Davis	-	Bondsman -	-	A large piece of coal in a "thick coal pit" rolled and crushed deceased to death.	-	-	-	1	-
" 5	2	Gawn	Rowley Regis	Messrs. Hingley	-	Pickman -	21	Injured by explosion of fire-damp on the 23rd December 1870. Died this day.	1	-	-	-	-
" 18	3	Hednesford	Cannock	Cannock Chase Colliery Co.	-	Horse driver	14	Explosion of fire-damp. The force of the blast drove him against a door and killed him.	1	-	-	-	-
" "	4	Pelsall	Pelsall	Messrs. Bloomer	-	Bondsman -	65	Whilst getting a piece of coal off the "face" a portion of it fell upon him and broke his collar-bone on the 13th instant. He however, through the shock to the system expired this day.	-	1	-	-	-
" "	5	Wyrley Cannock	Cheslyn Hay	Wyrley Cannock Colliery Co.	-	Horse driver	20	Fell down in front of a loaded "tub" in gait-road, which forced him against a timber-prop, and dislocated his neck.	-	-	-	1	-
" 24	6	Moxley	Bilston	Messrs. Groucutt	-	Pickman -	38	Fall of roof in thin mine -	-	1	-	-	-
" "	7	Willenhall	Willenhall	Lester and McGregor	-	Collier -	13	Fell into pit shaft -	-	-	1	-	-
" 25	8	Ladymoor	Bilston	Thos. Holcroft	-	Pickman -	36	Injured by fall of coal, in thick coal pit, yesterday. Died this day.	-	1	-	-	-
" 27	9	Conduit	Brownhills	Conduit Colliery Co.	-	Horse driver	16	Crushed by "tub" in gait-road -	-	-	-	1	-
" "	10	New Hawne	Hales Owen	New British Iron and Coal Company.	-	Pickman -	39	Fall of roof in thick coal pit.	-	1	-	-	-
Feb. 1	11	Homer Hill	Cradley	Messrs. Evers	-	Bondsman -	-	Fall of coal in "thick coal" pit -	-	1	-	-	-
" 10	12	Moat	Tipton	Moat Colliery Company	-	Horse driver	17	Injured by waggon on surface incline plane.	-	-	-	-	-
" 14	13	Grange	Oldbury	N. Parkes	-	Pickman -	-	Whilst engaged propping the roof in a "thick coal pit," a portion of it fell and killed him on the spot.	-	1	-	-	-

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situated.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.
1871. Feb. 22	14	Buffery	Dudley	Howl and Mason	J. Waterhouse	Bondsman	—	Injured by explosion of fire-damp on the 10th inst. Died this day.	1	—	—	—	—	1
"	15	Gawn	Rowley Regis	Messrs. Hingley	S. Hadley	Collier boy	14	Injured by explosion of fire-damp on the 23rd Dec. 1870. Died this day of congestion of the lungs.	1	—	—	—	—	1
"	23	Gawn	Ditto	Ditto	W. Green	Bondsman	39	Suffocated by gases, the product of an underground fire, brought about by spontaneous combustion.	—	—	—	1	—	1
Mar. 10	17	Wallows	Brierley Hill	Earl of Dudley	J. Randle	Ditto	46	Fall of coal from a "slip" in the "rib" of a thick coal pit.	—	1	—	—	—	1
"	18	Goscote Hall	Goscote	E. Crap	J. Hope	"	—	Fell off the bowk whilst ascending the Pumping pit, with the engine man.	—	—	1	—	—	1
"	19	Netherend	Cradley	Messrs. King	T. Price	Engine man	—	Whilst changing wire rope the gland slipped, and allowed the rope to run into the pit shaft, which in its course struck the deceased and killed him on the spot.	—	—	—	—	1	1
"	25	Whitehall	Near West Bromwich.	J. Kendriek	J. Wright	Pickman	—	Injured by explosion of fire-damp on the 16th instant. Died this day.	1	—	—	—	—	1
"	25	Granville	Rowley Regis	Swindell and Collis	{ T. Pulley J. Rollason	Ditto	—	Fall of coal whilst engaged fixing timber props in thick coal pit - }	—	2	—	—	—	2
"	30	Highbridge	Pelsall	E. Crapper	{ J. Williams W. Crockstall	Ditto	28	A sudden irruption of sand and water - }	—	—	—	3	—	3
April 2	23	Rookery	Bilston	Frost and Cole	{ E. Reeves T. Williams	Collier boy	24	Injured whilst improperly riding on "incline plane," on the 1st instant. Died this day.	—	—	—	1	—	1
"	5	Wallows	Brierley Hill	Earl of Dudley	T. Taylor	Bond Deputy	26	Fall of coal from off the side of a pillar in "thick coal" pit, whilst the deceased was preparing a place to stand a tree.	—	1	—	—	—	1

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.
1871. April 20	25	Clifton	Oldbury	J. Collins	W. Birch	Horse driver	17	Fall of roof in gait-road of a thick coal pit.	-	1	-	-	-	1
" 21	26	Moor Lane	Brierley Hill	Edwards and Walker	S. Price	Ditto	17	Whilst the deceased was in a stooping position, a piece of coal about 50 lbs. weight, fell off the side of a gait-road and forced his head against an iron hoop (skip ring), which immediately deprived him of life.	-	1	-	-	-	1
" 26	27	Haden Hill	Rowley Regis	Bassano and Co.	E. Smith	Pickman	21	Premature explosion of gunpowder, on the 18th inst, whilst charging a shot. Died this day.	-	-	-	1	-	1
May 3	28	Wallows	Brierley Hill	Earl of Dudley	Z. Pearson	Ditto	55	Engaged driving an air-way about four feet wide, and whilst getting down some loose coal from the "roof" thereof, a mass of fine coal and batt fell upon him, which so doubled him up that he died before it could be removed. Thick coal pit.	-	1	-	-	-	1
" 4	29	Brownhills	Wallsall	W. Harrison	T. Cliffe	Ditto	19	Injured by explosion of fire-damp, on the 22nd ultimo. Died this day.	1	-	-	-	-	1
" 19	30	Himley	Kingswinford	Earl of Dudley	R. Bennett	Ditto	44	Preparing to prop the "roof," and whilst pulling a piece of Brazils, a rate (loose coal) fell from the side, which crushed him severely and caused his death soon afterwards.	-	1	-	-	-	1
" 20	31	Grace Mary	Rowley Regis	S. Minton	W. Hepton	Sinker	50	Whilst in the act of removing a scaffold in a sinking pit, he slipped and fell to the bottom (about 20 yards), and was killed.	-	-	1	-	-	1

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.
1871. May 20	32	Coneygree	Rowley Regis	Earl of Dudley	W. Raybould	Bondsman	21	Crushed by "tub" on incline plane, on which he was improperly riding.	-	-	-	1	-	1
" " 26	33 34	Bromford Wallows	West Bromwich Brierley Hill	W. H. Dawes Earl of Dudley	J. Carr J. Horner	Collier Bondsman	18 24	Fall of "roof" in thick coal pit Fall of coal from roof in "thick coal" pit.	- 1 1	- 1 1	- - -	- - -	- - -	1 1 1
" " 31	35	Bradley	Bilston	G. B. Thorneycroft & Co.	S. Hampton	Carpenter	34	Slipped off tacking plank into pumping pit shaft, whilst doing repairs at the top thereof.	-	-	1	-	-	1
June 11	36	Wallows Colliery.	Brierley Hill	Earl of Dudley	J. Allport	Pickman	-	Injured by fall of coal in thick coal pit, 21st April last. Died this day.	-	1	-	-	-	1
" " 15 " 17	37 38	Ditto White Heath	Ditto Oldbury	Ditto Thomas Price	J. Homer R. Jones	Bondsman Pickman	46 -	Fall of "roof" in "thick coal" pit Fall of roof in thick coal pit from a slip not previously seen.	- 1 1	- 1 1	- - -	- - -	- - -	1 1 1
" " 23 July 3	39 40	Tividale Cannock and Rugeley.	Rowley Regis Cannock	Earl of Dudley Cannock and Rugeley Colliery Company.	A. Gough J. Craddock	Bondsman Pickman	19 -	Fall of coal in thick coal pit Fall of coal whilst "holing" in thin mine. The coal appeared so sound in this instance, that one of the workmen was engaged at the time of the accident drilling a "hole" for a "shot" in the block, which fell and proved so fatal to "Craddock."	- 1 1	- 1 1	- - -	- - -	- - -	1 1 1
" " 5 " 6 " 16 " 24	41 42 43 44	Wyrley Cannock. Highfields Moxley Ramrod Hall	Cheslyn Hay Bilston Ditto Rowley Regis	Wyrley Cannock Colliery Company. H. B. Whitehouse S. Groucutt and Sons Earl of Dudley	G. Thomas E. Jones J. Reynolds E. Haywood	Horse driver Bondsman Watchman Bondsman	14 56 67 52	Crushed between "tubs," on 28th ult. Died this day. Fall of rock roof in thin mine Slipped between cog-wheels inside the pumping engine house. Injured by fall of coal in "thick coal pit" (broken leg), on the 4th instant. Died this day.	- - - 1	- 1 - 1	- - - -	1 - - -	- - 1 -	1 1 1 1

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.
1871. Aug. 8	45	New Hawne	Hales-Owen	New British Iron Co.	G. Southall	Bondsman	37	Fall of thick coal, which rolled upon deceased, and crushed him to death against the "rib."	-	-	-	1	-	1
"	46	Trentham	Willenhall	W. Price	J. Hall	Ditto	-	Fall of roof-rock in thin mine	-	1	-	-	-	1
"	47	Tibbington	Tipton	J. Howl	T. Warton	Pickman	24	Injured whilst cutting coal off a pillar, in "thick coal," on the 11th inst. Died this day.	-	1	-	-	-	1
"	48	The Fly	Old Hill, Rowley Regis.	Collis and Co.	T. Devey	Sinker	-	Pit-shaft collapsed whilst the deceased and another were doing repairs.	-	-	-	1	-	1
Sept. 5	49	Old End	Coseley	Messrs. Groucutt	J. Parkes	Bondsman	60	Fall of "foot coal" in a "thick coal" pit from a slip not previously seen. The deceased was so perfectly satisfied with the safety of the roof, that he was sitting down under it when the fall took place.	-	1	-	-	-	1
"	50	Old Park	Dudley	Earl of Dudley	G. Burrows	Ditto	18	Whilst at work in a thick coal pit a "bump" occurred, and forced a piece of "fine" coal out of the solid "rib," which struck the deceased and caused his death within an hour after the occurrence.	-	1	-	-	-	1
"	51	Wednesbury Oak.	Tipton	Philip Williams and Sons	M. Fenn	Ditto	43	Injured by a fall of timber and roof in a gait-road, caused by a "bump" in a thick coal pit, on the 8th inst. Died this day.	-	1	-	-	-	1
"	52	Wallows	Brierley Hill	Earl of Dudley	F. Ferguson	Slack Carrier	14	Fall of coal in thick coal pit from a smooth faced slip, about 150 lbs. weight.	-	1	-	-	-	1
"	53	Ladymore	Bilston	Thos. Holcroft	W. Botham	Pickman	-	Injured on the 22nd ultimo, by fall of new-mine coal from between two slips. Died this day.	-	1	-	-	-	1

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.
1871. Oct. 2	54	Tansley Hill	Dudley	J. Carlyle	E. Clarke	Pikeman	—	Injured by premature explosion of powder on the 27th ultimo. Died this day.	—	—	—	1	—	1
" 14	55	Buffery	Ditto	Howl and Mason	{ Richard and James Hodgkiss	Sinker	45	{ Suffocated by carbonic acid gas whilst engaged repairing an old shaft	—	—	—	2	—	2
" 16	56	Forest	Walsall	Thomas Checkley	G. Harper	Miner	—		A slight fall of roof broke the deceased's leg, which was amputated in the Cottage Hospital, Walsall. Died this day.	—	1	—	—	1
" 17	57	Salt Well	Netherton	Earl of Dudley	J. Kendrick	Door Boy	14	Whilst passing from the door to the stable the horse knocked the deceased down, seriously injuring him, on the 11th inst. Died this day.	—	—	—	1	—	1
" 18	58	Pelsall Hall	Pelsall	J. M. Morgan and Co.	T. Blake	Pickman	—	Crushed by rage	—	—	—	1	—	1
Nov. 4	59	Short Heath	Bloxwich	Messrs. Bloomer	J. Taylor	Banksman	25	Pushed skip into pit shaft and followed it.	—	—	1	—	—	1
" 6	60	Buffery	Dudley	Howl and Mason	G. Skidmore	Bondsman	—	Injured by a fall of coal in a thick coal pit, on the 13th ultimo. Died this day.	—	1	—	—	—	1
" 9	61	Princes End	Tipton	Barbor's-Field Company	B. Marsh	Pickman	49	Fall of coal in the gait-road of a thin coal pit.	—	1	—	—	—	1
" 15	62	Forest	Walsall	Thomas Checkley	T. Martin	Ditto	25	Injured by a fall of coal in a head-way in thin mine, on the 11th inst. Died this day in the Walsall Hospital.	—	1	—	—	—	1
" 17	63	Granville	Rowley Regis	Swindell and Collis	J. Peplow	Ditto	—	Struck by a fall of coal, which the deceased was trying to get down, in thick coal pit.	—	1	—	—	—	1
" 22	64	Sampson	Oldbury	R. Haines	H. Lloyd	Collier boy	—	Injured by a fall of coal in "thick coal" pit, yesterday. Died this day.	—	1	—	—	—	1

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situated.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.
1871. Nov. 23	65	Black Lake	West Bromwich	Horton and Sons	D. Plant and seven others.	Two night deputies and six colliers.	—	Suffocated whilst asleep by gases produced by an underground fire.	—	—	—	8	—	8
" 25	66	New Hawne	Hales Owen	New British Iron Co.	J. Boyway	Pickman	30	Deceased after completing the cutting of the "white coal" in thick coal pit, stood under it to knock the spurn out, when the coal fell and killed him on the spot.	—	1	—	—	—	1
Dec. 4	67	Moorcroft	Bilston	D. Skidmore	A. Jones	Collier	—	Fall of coal off side of gait-road, which deceased was mischievously under-cutting for amusement.	—	1	—	—	—	1
" "	68	Himley	Kingswinford	Earl of Dudley	T. Darby	Ditto	14	Fell down under loaded "tub," and was crushed to death.	—	—	—	1	—	1
" "	69	Moseley Hole	Willenhall	Hodgkiss and Co.	T. Robinson	Horse driver	15	Injured whilst improperly riding on a "tub," on the 2nd inst. Died this day in the hospital.	—	—	—	1	—	1
" 9	70	Buttary	Dudley	Hewl and Mason	J. Kite	Pickman	—	Fall of coal, which deceased was getting down in the gait-road of a thick coal rib and pillar pit. The result of a "bump."	—	1	—	—	—	1
" 12	71	Cannock and Rugeley.	Cannock	Cannock and Rugeley Colliery Company.	J. Hix	Collier	—	Injured on the 9th instant, whilst oiling the ropes attached to an underground steam engine. Died this day, after amputation of one of his legs.	—	—	—	1	—	1
" 14	72	Great Wyrley	Ditto	T. Bantock	C. Steadman	Charter master.	—	Fall of roof whilst deceased was improperly removing timber props.	—	1	—	—	—	1
" 27	73	Withymoor	Rowley Regis	Thos. Llewellyn	G. Pearson	Collier boy	15	Walked into the pit-shaft, which, at the time, was fenced on three sides thereof.	—	—	1	—	—	1
Total									6	40	6	29	3	84

List of the FATAL ACCIDENTS and LOSS OF LIFE arising therefrom in working the IRONSTONE MINES in the SOUTH STAFFORDSHIRE and WORCESTERSHIRE DISTRICT, during the Year ending 31st December 1871.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.
1871. Jan. 21	1	Mosely Hole	Willenhall	The Chillington Iron and Coal Company.	J. Larkin	Miner	36	Incautiously put his candle to the priming of a "shot," and fired the powder.	-	-	-	1	-	1
" 22	2	West Bromwich Hall.	Wednesbury	Messrs. Groucutt	J. Connor	Ditto	-	Injured by fall of roof on the 21st inst. Died this day in the hospital.	-	1	-	-	-	1
Feb. 9	3	Netherton	Dudley	Messrs. Grazebrooke	F. Bennett	Ditto	40	Fall of stone in Gubbin ironstone pit.	-	1	-	-	-	1
Total									-	2	-	1	-	3

Mr. Wales' Report.

REPORT ON the WORKING of the MINES INSPECTION ACT (23 & 24 Vict. c. 151.
for the SOUTH WALES DISTRICT for the Year ended 31st December 1871.—
By THOMAS E. WALES, Esq.

SIR,

Swansea, 29th February 1872.

As Inspector of Mines for the South Wales District, I have the honor to report as follows for the year ending 31st December 1871.

I am happy to be able to report a considerable diminution both as regards the number of fatal accidents and the loss of life arising therefrom, as compared with the previous year :—

Total fatal accidents in 1870	-	102
Ditto 1871	-	96
Less in 1871	-	6
Total lives lost in 1870	-	163
Ditto 1871	-	139
Less in 1871	-	24

being about 15 per cent.

The following monthly statement will show the time and circumstances under which the accidents occurred :—

LIVES LOST.

1871.	Number of Fatal Accidents.	Explosions.	Falls of Coal.	Falls of Stone.	Suffocation.	In Shafts.	Miscellaneous.	On Surface.			TOTAL DEATHS.
								Machinery.	Miscellaneous.	Boilers Bursting.	
January	9	—	2	3	—	2	1	—	1	—	9
February	10	38	1	4	—	2	2	—	—	—	47
March	5	—	1	3	—	—	1	—	—	—	5
April	13	—	3	9	—	—	1	—	—	—	13
May	13	—	5	4	—	—	4	—	—	—	13
June	7	1	—	4	—	—	2	—	—	—	7
July	2	—	1	1	—	—	—	—	—	—	2
August	6	—	—	2	—	3	1	—	—	—	6
September	7	1	1	1	—	1	3	—	—	—	7
October	3	4	2	1	—	—	—	—	—	—	7
November	11	2	1	5	—	1	3	—	—	—	12
December	10	1	—	7	—	—	3	—	—	—	11
Total	96	47	17	44	—	9	21	—	1	—	139

And the annexed tabular statement will show the number of persons employed and tons of coal raised per fatal accident, also the number of persons employed and tons of coal raised per life lost :—

	1870.	1871.
Number of persons employed	29,000	37,960
Quantity of coal raised in tons	9,299,772	9,120,000
Number of fatal accidents	102	96
Number of lives lost by ditto	163	139
Number of persons employed per fatal accident	284	395
Number of tons of coal raised per ditto	91,174	95,000
Number of persons employed per life lost	178	273
Number of tons of coal raised per ditto	57,054	65,611

Explosions of Gas.

Six explosions have occurred during the year, resulting in the loss of 47 lives, as against seven with a loss of 61 lives in 1870.

The first explosion occurred on the 24th of February at the Pentre Colliery, Rhondda Valley, belonging to the Pentre and Church Merthyr Steam Coal Collieries Company, by which 38 persons were killed. Fortunately this explosion occurred during the night when only 36 persons were in the colliery, all of whom, with two others, who bravely went to rescue the unfortunate sufferers, were killed.

I annex a copy of the evidence given by my colleague Mr. Brough and myself at the coroner's inquest, which was held near the colliery and extended over several days.

Mr. Lionel Brough, of Clifton, said,—“I am Government Inspector of mines for the South-western District. I have made an examination of this colliery and have attended here by the order of the Secretary of State. I travelled portions of the pit on March 10th, accompanied by Mr. Wales and Mr. S. W. Kelly, and examined the faces in the North District going to the end of No. 3 heading. On coming back we met Mr. Burn and Mr. David Evans and went further into the matter. I have not examined the whole of the pit nor the extremity of Gay's (No. 3) heading, but have depended entirely for information about the place upon what I have heard during the evidence and which I have attentively listened to and recorded. I am of opinion that this extreme north point has supplied the bulk of the gas that brought about the calamity. I have no doubt that the gas has been in the habit of appearing in the other part of the works, but the extremity of No. 3 heading is the great and independent source. I allude to that portion of the north part which is the face of Elias Thomas's heading. The gas which came from the extreme northern point picked its way slowly to the furnace through Gravell's heading, down the incline, and so on to the furnace. It must have fired there and instantly produced an expansive heated atmosphere, commonly called a blast, which followed back these very footsteps which I have described to the northern end from which in its gaseous state it originally came, and then turned round the face portions of it, breaking away through into the main heading, wherever it could find an outlet, and showing by all its traces that it flew south. I believe one of its discharges or gun barrels, for every heading or aperture after an explosion is a gun barrel, flew away through Elias Thomas's north heading, expanded itself to the westward (I am now speaking with reference to that portion), and blew down the double doors in the main east heading. I have no doubt it all flew away in every open direction right away to the end. I am also of opinion that the blast in flying back to the northern end picked up more gas which was coming off, which kept that atmosphere alive in a state of flame and burnt men to the southward. It is evident it must be so if the explosion fired the blower at the end of Rosser's heading, as that fact is sworn to, and by the same means men were burnt in the other parts of the colliery.”

“A hurricane on the surface will travel at the rate of 100 miles per hour, but a hurricane has no chance with a blast underground. All the states and conditions of the circumambient air upon the surface have been carefully worked out and elaborated by philosophical men and they put down the rate of a hurricane's velocity at what I name; and I maintain that that speed is nothing compared with that of a blast underground. In answer to the coroner, I think the bottom of the pit is not a good arrangement, but finer openings I think I have rarely seen, and the intakes and the returns are of very ample dimensions indeed. I consider that 45,000 cubic feet of air under ordinary circumstances would be enough to work this colliery, including the 4 feet, the other works, and the western abandoned portion. I decidedly do not approve of these small pits. It was sunk by a Staffordshire man, and in that county they will sink a pit a hundred or two hundred yards to work ten acres of coal, but in Wales, when we have a hundred times more fire we want big pits. All carriages ought to have bonnets, for a very small lump of coal falling down a shaft will knock a man's brains out, its like a bullet. I disapprove of the bottom arrangements. They want more winding power, but that has nothing to do with the explosion, but the winding engine is imperfect in its arrangement working two shafts at the same time. With regard to the ventilation, the arrangements for the distribution of the air are as fine as any I ever saw. I have now given you an entire history of what in my opinion the explosion must have been together with its cause and the course of the blast, but you must expect more explosions in this new valley. The ground is fresh, few pits have been sunk, the gas has never been tapped, the depths of the earth has never been perforated, and gas exists in the most awful state of pressure and in an intensely ignitable condition, and the only panacea, the only safeguard, for human life in pits sunk in a new valley is an abundance of wind, and that is not all, we must in addition look forward to some better invention in lamps.”

Mr. Thomas Errington Wales said,—“ I am Government Inspector of Mines for the South Wales District, and have drawn up the following Report :—

“ I shall first notice the probable condition of the pit at the time of the explosion, the probable cause and where it originated, and then make a few suggestions, which if carried out would in my opinion conduce to the safer working of the colliery in future. From the several inspections I have made of the colliery since the explosion, together with the evidence given by the different witnesses who have been examined, it is clear that although small blowers had been frequently met with the quantity of air was sufficient to properly dilute them; and only two witnesses (with the exception of the fireman, John Edwards,) have spoken to accumulations of gas; one about five and the other about nine months ago. From the several measurements I made of the air currents, I believe the quantity passing at the time of the explosion would probably be about 45,000 cubic feet per minute. This quantity would, in my opinion, be quite sufficient to properly ventilate the colliery, which is not by any means an extensive one, under ordinary circumstances. The colliery as you already know, was worked with locked safety lamps, but shot firing, under the usual restrictions was permitted. I have always recommended that wherever safety lamps are used shot firing should be prohibited, and I do so on this occasion. It appears that all the safety lamps were properly examined and locked by the two firemen at the lamp cabin, near the bottom of the pit, every morning as the workmen proceeded to their work. According to No. 16 Special Rule, all lamps requiring to be relighted during the day should have been relocked by a properly appointed person. Instead of this, however, it appears a lamp key was kept chained at each of the two lamp stations, viz., in the 4 feet and 2 feet 9 in. veins, but no person was appointed to see that the lamps were again properly locked. This, in my opinion, was clearly a breach of that important rule. From the evidence of Edwards the fireman, he allowed the colliers to work where there was, what he considered, only a small quantity of gas. This was a violation of both Number 1 General and Number 24 Special Rule. The men ought to have been withdrawn at once, and the fireman's conduct, in allowing the men to work under such circumstances, was most reprehensible, and in my opinion totally unfits him to discharge the important duties of a fireman. As to the cause of the explosion I believe it was due to a large blower at the extreme north part of the colliery, which continued to give off gas for several days to such an extent as to render it too dangerous to pass the return air over the furnace.

“ I believe this discharge of gas rendered the return current of air explosive, which on reaching the furnace was ignited. All the traces and marks left show that the explosion originated there. Then as to the future working of the colliery, which appears to be liable to blowers, in my opinion it should be placed in the hands of a competent mining engineer or colliery manager.

“ I beg also to suggest that a new shaft of from 12 to 14 feet diameter be sunk for an upcast, and the present two shafts used as downcast shafts. That a fan capable of producing from 80,000 to 100,000 cubic feet of air per minute be placed on the top of the new shaft, in lieu of the present furnaces. This would prevent the possibility of another explosion at the furnace in case another large discharge of gas should unfortunately be met with. But until a more perfect safety lamp be discovered I despair of being able to cope successfully at all times with those sudden outbursts of gas, which have proved the great danger attending the working of these steam coals in this and the Aberdare valleys.

“ *The Coroner.*—But by saying what you consider necessary for the future do you wish to imply that something has been wanting in the past, or that the owners have been guilty of carelessness.

“ *Mr. Wales.*—Certainly not, but from what we have heard and seen it seems to me to be necessary to take further precautions. This is the first explosion that has taken place in the 2 feet 9-inch seam, either in this or in the Aberdare valley, and hitherto this seam has not by any means been considered a fiery one; but after what we have now witnessed I think it may very well be regarded as not less fiery than the 4 feet seam.

Copy of Verdict returned by the Jury.

“ The jury are unanimously of opinion that the explosion occurred through a sudden discharge of gas, and that it probably ignited at the furnace, and that there is no blame attached to any of the officials connected with the colliery.

“ The jury strongly recommend that the suggestions of Mr. Wales, the Government Inspector, should be carried out as soon as practicable, and they also recommend that a night bankman should be constantly employed.”

"*The Coroner* said,—I can only say that I concur most fully with your verdict. I may say it is a most just and proper one, and I thank you for the great attention you have paid to the matter."

Both from my own inspections and from the evidence given at the inquest, it was evident that the colliery was very subject to "blowers" or sudden outbursts of gas, and that therefore it was of the greatest importance that my suggestions with reference to the future working of the colliery should be carried out, or a similar calamity might occur any day. I wrote the owners in accordance with section 17, 23 and 24 Victoria, chapter 151, and pointed out to them the great danger attending their continuing to work the colliery by furnace ventilation. I also reported the case to the Home Office, and I am glad to be able to state that the owners have now undertaken to carry out my recommendations as soon as practicable.

The second explosion took place in the Vochriw Colliery belonging to the Dowlais Iron Company, on the 29th June, causing the loss of one life.

This is an extensive colliery, and is worked with naked lights. A small quantity of gas had, unknown to the officials, accumulated on the top of a fall, which passed on to and was ignited by the deceased's naked light.

The third explosion occurred on the 30th September in the Court Herbert Colliery, belonging to the Dynevor Coal Company, which also resulted in the death of one person.

This colliery was worked with naked lights, a small blower of gas had been met with, which came in contact with and was ignited by the deceased's naked light.

The fourth occurred during the night of October 4th, in the Gadly's colliery, belonging to the Gadly's Iron Company, Aberdare, causing the death of four persons.

The following is a copy of my evidence at the inquest, and the verdict of the jury:—

"On the morning after the explosion I made a careful examination of the upper 4 feet workings where it occurred."

"The colliery known as the Gadly's Old Pit has two shafts, viz., downcast 68 yards deep and 146 feet area, the upcast 65 yards deep and 78½ feet area. The downcast is used also for raising the coal, &c., &c., but the upcast only for ventilation. The ventilation is effected by two furnaces at the bottom of the latter shaft. The quantity of air passing into the colliery is about 39,000 cubic feet per minute, out of which 10,711 feet reaches No. 4, where it is again sub-divided, 7,875 going to the south, and 2,836 feet to the north, the remainder, 28,289, being split off at the different places as described by Mr. Thomas.

"The distance the air travels from the D. C. shaft to the face of the heading is 1¾ miles, and from there back to the upcast about another mile, so that it actually travels about 2¾ miles underground.

"The district was worked with locked safety lamps, but shot firing was allowed. A cabin for relighting the lamps was about 400 yards back from the face, where about 13,000 feet of air was passing per minute.

"I believe the explosion occurred in one of the stalls between the letter 'A' and the face of the heading, and although I found no gas there when I made my examination, I think the quantity of air passing was just sufficient to keep the faces clear, and that on the slightest decrease, either from the neglect of a door, or from the furnaces being slackened, the balance would be on the other side, and gas would accumulate; and as at the time the explosion took place one of the furnaces would be getting low for the purpose of cleaning, I rather incline to the opinion that the accumulation of gas which was fired may have been due to the latter cause.

"As there is no evidence to show that a shot had been fired immediately before the explosion, and as all the men were, so far as we can ascertain, using locked safety lamps, it is difficult to conjecture how the gas had been ignited. Possibly if the missing lamp could be found it might throw light on the matter. Considering the shallow depth of the two shafts and the long distance the air has to travel, I do not think it practicable to increase to any appreciable extent the present quantity of air with furnace ventilation; therefore mechanical ventilation should be resorted to. It is nearly two years since I discussed this matter with Mr. Davies and Mr. Thomas, the managers, when I recommended the application of mechanical ventilation to increase the quantity of air. Since that time I have both by letter and verbally directed their attention to the importance of adopting my recommendation, but without success, and I can give no reason why it has not been adopted, except on the score of expense, which in my opinion should never be set against 'safety.'"

"Perhaps Mr. Davies or Mr. Thomas may be able to give another reason, although I always believed they fell in with my views and saw the necessity of resorting to

mechanical ventilation, which I again recommend should be adopted, and that without loss of time."

Verdict of the Jury.

"We are of opinion that these met with their deaths through an explosion of gas in the Gadley's Colliery, Oakwell's stall, supposed to have accumulated owing to the door being left open and that it ignited by coming in contact with fire, in some unknown way."

"We recommend that the company should adopt the suggestion of Mr. Wales, the Government Inspector, with reference to the increased ventilation."

The company have now agreed to carry out the suggestion I made, namely:—to erect a powerful fan in lieu of the furnace.

The fifth explosion occurred in the Hook Colliery, Haverfordwest, resulting in the deaths of two persons, and injuries, more or less serious, to 11 or 12 others.

Copy of Evidence at Inquest.

"Mr. Thomas Errington Wales, deposed:—I am inspector of coal mines for the South Wales district. I received no official report of this accident until the Monday after it occurred. On the next day I went to Hook Colliery, and made an examination of the workings where the explosion took place. I measured the quantity of air passing, and found it from 5,000 to 6,000 feet per minute. I do not consider this a large quantity of air, but I believe it would have been sufficient to carry off all the gas, if it had been properly applied; but this was not done. The quantity of air which really reached the face of the workings, where of course it was most required, was very small indeed, and I found, as might have been expected, gas accumulated where the men were at work. That in my opinion, was clearly a breach of the first general rule. Men ought never to be allowed to work, not even with a safety lamp, where gas is lodged. From what I have seen in some collieries in this county and Carmarthenshire, I believe there is a tendency to introduce the use of the safety lamp as a substitute for proper ventilation, which is to be regretted. I would further observe that allowing gas, however small in quantity, either in or near a working place, is a violation of the first section of the Coal Mines Act; and that in all such cases that come under my notice, it will be my duty to recommend proceedings against the parties in charge of the colliery. Wherever men are allowed to work in the presence of gas, I invite them to communicate with me at Swansea."

With your permission proceedings were instituted in this case against the manager of the colliery, for a violation of the first general rule of the Coal Mines Inspection Act. The case was tried by a bench of magistrates at Haverfordwest, and the full penalty of 20*l.* was inflicted.

The last occurred on the 26th of December, in the Cwmdare Colliery, belonging to the Powell Duffryn Steam Coal Company, resulting in the death of one person.

This explosion was due to a small quantity of gas having accumulated in a cavity in the roof of the main level, where naked lights were used.

It was supposed that the deceased had, for some reason or other, raised his naked light into the cavity and ignited the gas. My opinion is, that owing to a very low barometer which prevailed on that day, the gas had come down from the cavity just when deceased was passing underneath, and was ignited at his open light.

Although this cavity had existed for a long time previously, no accumulation of gas had ever been discovered in it.

Falls of Stone and Coal.

The total number of deaths from these causes is 61 as against 53 the previous year, namely:—

	1870.	1871.
Deaths from falls of coal	23	17.
Deaths from do. of stone	30	44.

It will be observed that there is a decrease of six deaths from falls of coal, whilst there is an increase of 14 deaths from falls of stone in 1871.

I have noticed in previous reports, that under the system which prevails in this district, the colliers themselves have to timber and secure the roof or top of their working places.

With few exceptions the labour performed by the colliers in fixing the timber in the faces of their working places (but not in the main roads or thoroughfares) is paid for not according to the quantity of timber they may set but according to the quantity of coal cut, so that whether much or little timber has been set the amount of remuneration they receive is the same. This being so, I fear the colliers look upon the matter as though they really got no pay whatever for such work, and consequently do not attend sufficiently to it.

There are I conceive two ways of meeting or obviating this state of things :—

1st. By paying the colliers according to the actual quantity of timber fixed and not by the ton of coal cut.

2nd. By appointing a staff of men specially for doing such work, and so relieve the colliers entirely from having anything to do except to cut coal.

The latter plan is adopted in the counties of Northumberland and Durham, and although the quantity of coal raised there is probably about three times as large as is raised in the whole of South Wales yet the number of deaths is less. This certainly shows a great contrast between this and these two districts in favour of the latter ; but by comparing this district with any six or eight others where the Durham and Northumberland system does not obtain it will be observed that the result is also greatly against South Wales, so that I think the great difference in favor of the Durham and Northumberland districts cannot be due altogether to the system of timbering practised there. I know from many years' experience in the three districts instanced that the roofs of the South Wales coals are much worse than those of the other two districts.

I should say the quantity of timber used per ton of coal raised will be at least four times as much in Wales as in Durham and Northumberland.

This however only goes to show the great necessity of introducing, if possible, a better system of timbering into this district.

As the number of deaths under this head is about 44 per cent. of the whole deaths, the matter has naturally received much of my attention for some years, and I am now of opinion that if the colliers were relieved of all responsibility in fixing the timber, and properly qualified men were selected to do such work, a considerable saving of life would accrue.

By such a system a much better supervision would be maintained throughout the whole of the colliery, as each man so appointed would be responsible for the district under his charge.

Under the present system, the whole supervision of a colliery of ordinary extent devolves upon three or four persons, namely, the viewer, who probably does not go through the whole of the colliery oftener than twice or thrice a week, the overman, who does not go through the whole of the workings daily, and two firemen, who have always to make one daily inspection before the colliers go to their work. The remainder of the day is spent by them in visiting such places as they deem necessary, and in fixing doors, brattices, &c.

Under the system proposed this number would be increased to 12 or 14, and although the increased supervision would not be in equal proportion, it would be much greater than at present ; and as the increased number of men would do all the timbering, the extra cost involved would not be considerable.

Shaft Accidents.

The number of deaths under this head is nine, as against 17 the previous year.

No. 1. The first occurred in the Abercwmboy Colliery, and was caused by the descending cage alighting on the deceased whilst passing underneath it at the bottom of the shaft.

No. 2 took place at the Forchnoel Colliery, Aberdare. The deceased, who was owner, was standing at the top of the shaft, and was engaged in overhauling the slack rope between the horse gin and the sinking shaft, and by some means he overbalanced himself and fell down the shaft.

No. 3. This accident occurred at the Gadly's Colliery. The deceased, who was not engaged at the colliery, had asked the manager to be allowed to go down the pit from curiosity, never having been down a pit before. The manager consented, and said he would go with him, but something prevented him doing so, and he sent a person to accompany him. On reaching the bottom of the shaft the cage was raised, through some mistake in signalling, and the deceased, instead of remaining in the cage, attempted to get out, and was caught by the cage and killed.

No. 4. This accident occurred at the Morfa Colliery belonging to Messrs. Vivian & Sons.

The deceased, who was foreman, was engaged in examining the shaft, when it is supposed a small stone fell and struck him on the head, killing him on the spot.

No. 5 occurred in the big coal pit, Cwmbargoed Colliery, belonging to the Dowlais Iron Company.

Whilst the deceased was ascending a large stone fell upon him from the sides of the shaft. This shaft had been examined only a few days before the occurrence, and was considered quite safe.

No. 6 occurred at the Llangennech Colliery, Carmarthenshire, belonging to Mr. Margrave.

The deceased was engaged with the pumps in the shaft, and fell from the stage on which he was standing.

No. 7. In this case the deceased was also engaged with the pumps, when the chain, on which a large pipe was suspended, broke and fell upon him. The chain had only been in use that day, and was calculated to carry a much greater weight than was suspended.

From my examination I think the chain must have caught something and became slack between the top of the pit and the windlass. In a short time the weight of the pipe broke away the obstruction, and the jerk caused by the slack chain broke it.

No. 8. This accident occurred at the Merthyr Vale, New Winning, belonging to Messrs. Nixon, Taylor, and Cory. The deceased was engaged in sinking, when a stone from the sides of the shaft fell upon him.

No. 9. The deceased was engaged as hitcher at the Long Work Pit, Cwmbargoed, belonging to the Dowlais Iron Company, and whilst passing through the shaft either a stone from the sides of the shaft, or a piece of coal from the ascending tram, must have fallen upon him.

Miscellaneous Underground Accidents.

The number of deaths under this head is 21 as against 16 the previous year.

One death was caused by an explosion of gunpowder, five by trams on inclined planes, and 15 by trams on headings and levels.

The great fatality under this head is due, in my opinion, to the doorboys, whose ages vary from 10 to 13, having to travel all day with the hauliers, and for the most part in front of the horses and trams.

At such tender ages boys are physically incapable of performing such work, and no wonder that they should so frequently fall in front of the trams and be more or less seriously injured, or, as is too often the case, killed.

Out of the 20 persons killed by trams 30 per cent. were doorboys.

Doorboys should remain stationary at the doors, and not have to travel with the hauliers.

Surface Accidents.

Only one death has occurred under this head as against 15 the previous year.

The deceased was engaged at Tondy Colliery, belonging to Messrs. John Brogden and Sons, and was killed by a truck passing over him.

The Pentre Colliery explosion, which was the only large one which occurred during the last year, was clearly due to a sudden outburst of gas which passed right back to, and was ignited by, the ventilating furnaces.

These sudden outbursts of gas are the greatest source of danger to be dreaded in working the fiery steam coals of South Wales, and in my opinion in all new collieries mechanical ventilation should be resorted to, to prevent explosions from gas igniting at the furnaces.

When a large blower of gas is met with in a new colliery the distance is so short that there is not time for the gas to be diluted before it reaches the furnace, when of course an explosion must ensue.

If the distance from the furnace to the face where a blower of gas was met with was 500 yards, the area of the return say 40 square feet, and the quantity of air passing 30,000 feet per minute, the gas so liberated would reach the furnace in two minutes.

Air per minute.		Velocity of air per min. in feet.		Distance from Furnace.		Minutes.
30,000	=	750	and	1500	=	2
		40 feet area of return	-	750		

Another source of great danger is the firing of shots where safety lamps are used, which I believe arises in a great measure from carelessness on the part of the officers in not insisting upon the workings, and all contiguous places, being kept perfectly free from

gas. It is the gunpowder igniting the gas which is allowed to accumulate where or near where the men are at work that does the mischief, and not the firing of the powder.

The only practical way of meeting this is to strictly prohibit shot firing wherever safety lamps are used.

Ironstone Mines.

Two deaths have occurred in these mines during the year, being the same number as in 1870.

One from a fall of stone, and the other from falling down a shaft.

I have the honour to be,

Sir,

Your most obedient servant,

THOS. E. WALES.

The Right Honourable
Henry A. Bruce, M.P., &c.,
Home Secretary,
Whitehall, London.

LIST of the FATAL COLLIERY ACCIDENTS, and LOSS of LIFE arising therefrom, in the SOUTH WALES DISTRICT during the Year ended 31st December 1871.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Underground.						On Surface.		
									Explosions.	Falls of Coal.	Falls of Stone.	Suffocation.	In Shafts.	Miscellaneous.	Machinery.	Miscellaneous.	Boilers bursting.
1871.																	
Jan. 7	1	Ynishir	Pontypridd	T. Jones	T. Sheppard	Collier	27	Killed by a fall of roof	-	-	1	-	-	-	-	-	-
" 9	2	Deep Duffryn	Aberdare	G. Brown	W. Heal	Doorboy	12	Killed by trams	-	-	-	-	-	1	-	-	-
" 10	3	Tondu	Bridgend	J. Brogden and Sons	D. James	Labourer	13	Killed by trucks on surface	-	-	-	-	-	-	-	-	-
" 11	4	Abercwmboy	Aberdare	D. Davies and Son	D. Thomas	Hitcher	30	Killed by a cage	-	-	-	-	1	-	-	-	-
" 10	5	Bwlfa	Ditto	H. Kirkhouse	M. Powell	Collier	13	Killed by fall of roof	-	-	-	-	-	-	-	-	-
" 11	6	Blaenrhondda	Pontypridd	Ditto	L. Morgan	Ditto	-	Ditto	-	-	-	-	-	-	-	-	-
" 16	7	Ffiorchheol	Aberdare	D. Bevan	D. Bevan	Owner	45	Killed by falling down shaft	-	-	-	-	-	-	-	-	-
" 23	8	Rhos	Llanelli	J. Jones	D. Lewis	Collier	19	Killed by a fall of coal	-	-	-	-	-	-	-	-	-
" 31	9	Berrington	Penclawdd	F. Rogers	John Francis	Ditto	59	Ditto	-	-	-	-	-	-	-	-	-
Feb. 1	10	Llwynypia	Pontypridd	Glamorgan Coal Co.	D. Jenkins	Ditto	26	Killed by an explosion of gunpowder	-	-	-	-	-	-	-	-	-
" 6	11	Caergynidd	Swansea	J. Walsh	D. Thomas	Haulier	13	Killed by trams on engine plane	-	-	-	-	-	-	-	-	-
" 7	12	Aberdare	Aberdare	J. Smith	J. Williams	Collier	21	Killed by a fall of coal	-	-	-	-	-	-	-	-	-
" 7	13	Tyrcenol	Swansea	J. Glasbrook	S. Davies	Ditto	24	Killed by fall of roof	-	-	-	-	-	-	-	-	-
" 8	14	Pennydarren	Merthyr Tydfil	Dowlais Iron Co.	J. Jones	Ditto	36	Ditto	-	-	-	-	-	-	-	-	-
" 20	15	Graig	Aberdare	Gadlys Iron Co.	W. Veal	Farmer	38	Killed by falling down a pit	-	-	-	-	-	-	-	-	-
" 22	16	Deep Duffryn	Ditto	G. Brown	W. Harris	Overman	38	Killed by fall of roof	-	-	-	-	-	-	-	-	-
" 23	17	Moria	Taibach	Vivian and Sons	W. Nettell	Ditto	52	Killed by stone falling down shaft	-	-	-	-	-	-	-	-	-
" 24	18	Pentre Colliery	Pontypridd	Church & Pentre Coal Co.	John Miles	Collier and 37 others.	36	Killed by an explosion of gas	-	-	-	-	-	-	-	-	-
" 25	19	Middle Duffryn	Aberdare	Powells Duffryn S. Coal Co.	David Lloyd	Collier	17	Killed by a fall of stone	-	-	-	-	-	-	-	-	-
Mar. 1	20	Yniseio	Pontypridd	Troedythiwr Coal Co.	-	Haulier	22	Crushed by a tram	-	-	-	-	-	-	-	-	-
" 1	21	Pennydarren	Merthyr Tydfil	Dowlais Iron Co.	J. Morgan	Collier	55	Killed by a fall of roof	-	-	-	-	-	-	-	-	-
" 22	22	Lower Duffryn	Aberdare	Powells Duffryn S. Coal Co.	J. James	Ditto	38	Ditto	-	-	-	-	-	-	-	-	-
" 24	23	Pennydarren	Merthyr Tydfil	Dowlais Iron Co.	D. Williams	Timber man	50	Ditto	-	-	-	-	-	-	-	-	-
" 28	24	South Duffryn	Ditto	Flymouth Iron Co.	J. Williams	Collier	12	Ditto	-	-	-	-	-	-	-	-	-
April 1	25	Blaengwawr	Aberdare	D. Davies and Son	E. Jones	Hitcher	31	Killed by a fall of coal	-	-	-	-	-	-	-	-	-
" 1	26	Llanwit	Llantrisant	Llanwit Coal Co.	G. Thomas	-	17	Killed by a fall of roof	-	-	-	-	-	-	-	-	-
" 3	27	Dunraven	Pontypridd	Dunraven Coal Co.	P. Jones	-	55	Ditto	-	-	-	-	-	-	-	-	-
" 12	28	Cwmdare	Aberdare	Powells Duffryn S. Coal Co.	J. Hay	-	10	Ditto	-	-	-	-	-	-	-	-	-
" 15	29	Fforchamman	Ditto	Ditto	J. Jones	-	23	Ditto	-	-	-	-	-	-	-	-	-
" 16	30	Graig	Ditto	Gadlys Iron Co.	J. Rees	Limberman	43	Ditto	-	-	-	-	-	-	-	-	-

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situated.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Underground.						On Surface.			
									Explosions.	Falls of Coal.	Falls of Stone.	Suffocation.	In Shafts.	Miscellaneous.	Machinery.	Miscellaneous.	Boilers bursting.	
1871.																		
Aug. 17	61	Bargoed	-	Dowlais	-	David Davies	-	Killed by a stone falling down shaft	-	-	-	-	-	-	-	-	-	-
" 21	62	Dinas	-	Pontypridd	-	{ Isaac John Isaac John, jr.	{ 15 36 } Ditto -	Killed by fall of stone	-	-	-	-	-	-	-	-	-	-
" 21	63	Llangennech	-	Llanelly	-	Thomas John	-	Killed by a carriage in shaft	-	2	-	-	-	-	-	-	-	-
" 23	64	Gwendraeth	-	Ditto	-	T. J. Margrave Daniel Watney	32 - Ditto -	Killed by a chain breaking, on which a pump was suspended. It is supposed that the chain, which was a new one, had caught something between the top of the shaft and the windlass.	-	-	-	-	-	-	-	-	-	-
						Josh. Lloyd	40											
Sept. 7	65	California	-	Cross Hands	-	David Roberts	-	Killed by a fall of coal	-	-	-	-	-	-	-	-	-	-
" 7	66	Merthyr Vale	-	Merthyr Tydfil	-	Thomas Metcalf	-	Killed by a stone falling from side of shaft.	-	-	-	-	-	-	-	-	-	-
" 9	67	Ty la Coch	-	Pontypridd	-	Thomas Davies	-	Killed by a fall of stone	-	-	-	-	-	-	-	-	-	-
" 19	68	Penallt	-	Glyn Neath	-	William Jones	63	Killed by trams on slant	-	-	-	-	-	-	-	-	-	-
" 23	69	Bwlfa	-	Pontypridd	-	Charles Pendom	21	Killed by trams on level	-	-	-	-	-	-	-	-	-	-
" 29	70	Cwm Neol	-	Aberdare	-	William Martin	20	Ditto	-	-	-	-	-	-	-	-	-	-
" 30	71	Dynevor	-	Neath	-	David Davies	12		-	-	-	-	-	-	-	-	-	-
Oct. 3	72	Dowlais	-	Merthyr Tydfil	-	G. Davies	40	Killed by an explosion of gas	-	-	-	-	-	-	-	-	-	-
" 4	73	Gadlys	-	Aberdare	-	D. Davies and three others.	28	Killed by a fall of stone	-	-	-	-	-	-	-	-	-	-
						Gadlys Iron Co.	27	Killed by an explosion of gas	-	-	-	-	-	-	-	-	-	-
" 10	74	Dinas	-	Pontypridd	-	O. Jones	34	Killed by a fall of coal	-	-	-	-	-	-	-	-	-	-
" 23	75	Carway	-	Kidwelly	-	Thomas Davies	42	Ditto	-	-	-	-	-	-	-	-	-	-
Nov. 3	76	Gellia	-	Neath	-	Joshua Jones	16	Killed by a fall of stone	-	-	-	-	-	-	-	-	-	-
" 6	77	Iguborwen	-	Aberdare	-	Daniel Richards	18	Killed by trams	-	-	-	-	-	-	-	-	-	-
" 9	78	Vochriw	-	Dowlais	-	David Thomas	13	Killed by a fall of coal	-	-	-	-	-	-	-	-	-	-
" 11	79	Cwmdu	-	Bridgend	-	W. N. Margrieve	14	Killed by a fall of stone	-	-	-	-	-	-	-	-	-	-
" "	80	Cwmbargoed	-	Dowlais	-	Rees Rees	35	Killed by a fall of stone or coal down shaft.	-	-	-	-	-	-	-	-	-	-
" 17	81	Cethin	-	Merthyr Tydfil	-	David Jenkins	35	Killed by a fall of stone	-	-	-	-	-	-	-	-	-	-
" 17	82	Cwmavon	-	Taibach	-	Jacob John	18	Killed by trams	-	-	-	-	-	-	-	-	-	-

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Underground.						On Surface.		
									Explosions.	Falls of Coal.	Falls of Stone.	Suffocation.	In Shafts.	Miscellaneous.	Machinery.	Miscellaneous.	Boilers bursting.
1871.									2	-	-	-	-	-	-	-	-
Nov. 22	83	Hook	Haverfordwest	T. Powell	{ Josh. James - J. Phillips -	Collier - 57 } Ditto - 96 }		Killed by an explosion of gas	-	-	-	-	-	-	-	-	-
" 23	84	Park	Hirwain	Aberdare Rhondda Co.	David Dymont -	Doorboy - 123		Killed by trams	-	-	-	-	-	-	-	-	-
" 28	85	Taibach	Merthyr Tydfil	Plymouth Iron Co.	Wm. Jones -	Collier - 40		Killed by a fall of stone	-	-	-	-	-	-	-	-	-
" 30	86	Gellia	Neath	Evans and Bevan	Richd. Richards -	Ditto - 14		Ditto	-	-	-	-	-	-	-	-	-
Dec. 7	87	Navigation	Aberdare	Nixon, Taylor, and Co.	Phillip Davies -	Roadman - 50		Killed by trams on engine plane	-	-	-	-	-	-	-	-	-
" "	88	River	Ditto	Aberdare Iron Co.	Caleb Lewis -	Collier - 40		Killed by a fall of stone	-	-	-	-	-	-	-	-	-
" 11	89	Rhos	Pantfynnon	Benjamin Jones -	David Morgan -	Ditto - 21		Ditto	-	-	-	-	-	-	-	-	-
" 12	90	Rhondda Mer- thyr.	Treherbert	Henry Lewis -	Thos. Griffiths -	Ditto - 35		Ditto	-	-	-	-	-	-	-	-	-
" 13	91	Park	Ystrad	David Davies and Co.	David Pugh -	Ditto - 43		Ditto	-	-	-	-	-	-	-	-	-
" 15	92	Ferndale	Pontypridd	D. Davies and Son	John Davies -	Haulier - 19		Killed by trams on self-acting plane	-	-	-	-	-	-	-	-	-
" 19	93	Llwynypia	Ditto	Glamorgan Coal Co.	{ David Richards - David Davies -	Collier - 29 } Ditto - 22 }		Killed by fall of stone	-	-	-	-	-	-	-	-	-
" 26	94	Cwm-dare	Aberdare	Powells Duffryn S. Coal Co.	Richard Rees -	Haulier - 19		Killed by an explosion of gas	-	-	-	-	-	-	-	-	-
" 27	95	No. 2 Cethin	Merthyr Tydfil	R. Crawshay	John Phillips -	Collier - 35		Killed by fall of stones	-	-	-	-	-	-	-	-	-
" 30	96	Upper Cwmpen- nar.	Aberdare	Powells Duffryn S. Coal Co.	John Griffiths -	Labourer - 37		Killed by trams on engine plane	-	-	-	-	-	-	-	-	-
								Total	47	17	44	-	9	21	-	1	-

Total number of accidents - 96
Total number of deaths - 139

Mr. Moore's Report.

REPORT of the INSPECTOR of MINES and COLLIERIES in the EASTERN DISTRICT
OF SCOTLAND for the Year ended 31st December 1871. — By RALPH
MOORE, Esq.

SIR,

Glasgow, 28th February 1872.

I HAVE the honour to submit my report for the year 1871.

The accompanying lists show that there were 52 deaths in coal mines, and three deaths in ironstone mines.

Most of the coal owners in my district have sent me returns of coals raised, and numbers of men employed, and I am enabled to make the following estimate :—

—	1870.	1871.
The number of persons employed in and about collieries was - - - - -	27,330	27,300
The tons of coal raised were - - - - -	8,595,238	8,883,926
The deaths were - - - - -	52	52
The number of persons employed for each life lost was - - - - -	525	525
The tons of coal raised per ditto - - - - -	165,293	170,844

During the last six years the loss of life was :—

—	1866.	1867.	1868.	1869.	1870.	1871.	Total.	Average.
By explosions - - -	5	11	1	1	12	3	33	5·5
„ falls - - -	17	23	25	30	28	31	154	25·7
„ shafts - - -	14	14	9	8	5	11	61	10·1
„ miscellaneous - - -	9	10	5	10	4	3	41	6·8
„ above ground - - -	2	2	3	9	3	4	23	3·9
	47	60	43	58	52	52	312	52·

Many of the fatal accidents were such as will always, I fear, continue to occur in coal mining, while others were caused by negligence and want of discipline. This was particularly the case with regard to the fatal explosions of firedamp, which were three in number, namely :—

(1.) On the 17th September an explosion of firedamp occurred at Fernigair Colliery, near Hamilton, which burned six persons, one of these fatally. The accident occurred in connexion with some pillar workings where the men worked with safety lamps. One of the roadsman was working amongst the men with a naked light, which he had placed close to a “fall” where gas had been seen in the morning. The light ignited the gas and burned the persons near the place. This accident was clearly due to the recklessness of the roadsman in using a naked light where the miners had safety lamps.

(2.) On the 18th October there was an explosion of firedamp in the coal workings of the Starlaw Shale pit, near Bathgate. The coal had been newly reached by a stone-drift from the shale workings. The air was led into the stone-mine by means of a brick brattice. But when the current reached the coal workings it was so much reduced by leakages that there was scarcely a visible current, and firedamp was usually found in some of the workings. On the morning of the accident the fireman of the pit, a bricklayer, and the deceased were about to put in some additional bratticing in one of the places which contained firedamp. They first sent the deceased in the dark to “waff” it out. In doing so it is supposed that he brought the firedamp in contact with some naked lights about 20 yards distant and it exploded. The man at the face was killed, and five others

were burned. There was little firedamp in the workings; a very ordinary supply of air would have been sufficient to have kept them clear. After the fire in this pit last year, the furnace was removed to the surface, where it is not so effective, and the company are now erecting a fan capable of raising 14,000 cubic feet per minute.

(3.) On the 27th December an explosion of firedamp at Mossend Colliery resulted in the death of the underground manager and serious personal injury to the overman. They had gone into a disused part of the workings with their naked lights, and ignited some firedamp which lay there. They were both much burned, and the manager died. This accident was caused by gross negligence on the part of the injured men, who ought to have made the examination with a safety lamp.

The loss of life from falls of roof and coal is above the average. This arises from the high death-rate in the Wishaw and Hamilton districts. The Wishaw and Hamilton districts comprehend the parishes of Dalziel, Hamilton, Cambusnethan, Dalserf, and Carluke, wherein are employed 7,530 men, and upwards of three and a half millions of tons of coal are raised annually. In these districts during the last year 17 lives were lost by falls, being one for every 208,087 tons of coals raised, while in the remaining portion of my district 381,887 tons were raised for every life lost. The seams of coal principally worked are the Ell coal, from 5 to 8 feet thick; the Pyot-Shaw coal, from 3 to 4 feet thick; the Main coal, 4 feet thick; and the Splint coal, 4 to 6 feet thick. These are all worked by the Durham method of pillar and stall method, the pillars being generally left about 20 yards square, and afterwards in returning systematically worked away. This modification of stoop-and-room has only been recently introduced into Scotland. Until within the last 10 or 15 years the practice was to leave from a third to a sixth of the coal in pillars, and while these pillars were in some cases partially removed, in the majority of cases no portion was got. It is, however, very different now where the quantity of coal left in pillars is so great that the removing pillars yield more than the first working, and being more dangerous the fatality is increased. In this district and throughout Scotland the collier both works the coal and supports the roof, but in Durham, where the mode of working originated, the excavation of the coal and the maintenance of the roof are divided into separate branches of labour, and no doubt this is the best arrangement, the death-rate from falls being only one for every 514,000 tons of coal raised. The supervision on the part of the masters is better than it was, otherwise the death-rate, high as it is, would in all probability be higher, as the quantity of coal worked from pillars is yearly increasing. The compulsory adoption of the Durham practice of having experienced persons for setting props, as proposed in the new Bill, will, in my opinion, reduce the death-rate from this cause.

The loss of life from falls, &c. in the different portions of my district is shown in the following table:—

	Tons.	Men.	Explosions.	Falls.	In Shafts.	Miscellaneous.	Above ground.	Total.
Lanarkshire, Wishaw district - -	3,537,489	7,530	1	17	7	2	2	29
Ditto other portions - -	2,229,617	7,548	1	8	3	1	-	13
Fife and Clackmannan - -	1,503,523	5,204	-	2	-	-	1	3
Edinburgh and East Lothian - -	715,286	3,161	-	2	1	-	1	4
Stirling and Linlithgow - -	898,011	3,857	1	2	-	-	-	3
	8,883,926	27,512	3	31	11	3	4	45

Of the 11 lives that were lost by shaft accidents:—

Three lives were lost by persons employed at the pit-head (two of whom were boys) falling from the surface, which might have been prevented had the entrances been protected by gates. And in two cases at least the parties had, without thinking, run a hutch into the pit apparently expecting the cage to be there, when it was at the bottom of the shaft, and were drawn in by it. In accident No. 52 the gate was off under repair. It is to be remarked that people get accustomed to and rely upon these gates, and an accident is more likely to happen if the gate is off temporarily than if it had never been applied at all.

A miner fell off the cage while ascending the shaft. There was no defect in the cage or slides to account for the accident.

One man was killed while ascending the shaft, by a piece of loose strata falling from the side of the shaft. An engine had been started underground a few days before, and

the exhaust steam ascending the upcast shaft had acted injuriously on the soft strata. The steam is now carried to the surface in pipes.

At Chapel Colliery the manager of the pit was killed by a crane rope breaking. I examined the rope; it was old and worn out. It turned out that the deceased was warned that the rope was unsafe, yet he deliberately made use of it instead of a better one, which he could have had with little trouble.

Two men were killed by falling from mid-workings. In both cases the deceased were in a great measure to blame themselves. In one case the "bottomer" was standing at his post, and the man who was killed rushed past him and fell into the shaft. In the other case the deceased was a roadsman who was working within 20 yards of the shaft, on day's wages, and therefore in no particular hurry, and he might have seen that no cage was there.

At Polton Colliery a man was killed by the winding drum getting out of gear, through the engineman neglecting to secure it properly. The engineman was tried for manslaughter and sentenced to one month's imprisonment.

Two persons were crushed at the pit bottom. In one case the engineman lifted the cage before receiving the proper signal. In the other the deceased crossed the bottom of the shaft while the cage was descending.

None of the other accidents call for special remark.

It is to be hoped that the General Rules proposed by the new Bill will be the means of improving the discipline and so diminishing the loss of life in and about mines.

But it is to the owner of the mine, at least to the person who controls the expenditure, that we must look for the adoption of improvements. He should not rest contented with appointing a competent manager, but should satisfy himself either by his own examination or by periodical examinations made by competent parties, that his works are really well managed.

The examinations might be made quarterly, and they should include the whole arrangements and machinery at the surface of every pit; the whole arrangements under ground; and in particular the engineer making the investigation should go through every road in the pit, into every working place, and through all the airways, to see the mode of working; any deviation from it; noting the mode of supporting the roof; the mode of haulage, minimum height of roads, extent of minimum height, the quality of the ventilation, size and length of airways, the quantity of air in circulation, with any other remarks and suggestions for improvements and alterations on the operations or discipline of the pit.

There is so much of the work underground where it is only accessible by laborious personal exertion that few owners take the trouble to make personal examinations, and it is generally only when the costs exceed the ordinary standard or the output falls off that the manager is interfered with.

Examinations such as I have pointed out would bring before the owners the state of matters as seen by a neutral qualified person, and would doubtless tend to extend the knowledge of, and develop, the safest and best systems of working and economising coal, and would also improve mining appliances and discipline.

I am satisfied that in a pecuniary point of view investigations of this kind would be beneficial to the coal owner, and they would contribute to the comfort and safety of the mine.

The mining engineer making these examinations should be able to show that he is fully qualified, and a fair test would be that he—

Has been two years in a civil engineer or mine surveyor's office, able to survey mines, to construct branch railways, and other erections at collieries.

Has mechanical drawing, plan drawing, and free-hand sketching.

Has been two years at a colliery, engaged in the office, but underground for ten hours each week during that time.

Has a knowledge of the different modes of working and ventilating coal; of haulage; of sinking and of mechanical engineering as applied to collieries.

Has a knowledge of the theory of steam and mechanics, and some knowledge of geology, mineralogy, and chemistry.

It would be very desirable that all managers of mines possessed these qualifications.

Bearing on this subject I have much pleasure in mentioning that the managers of the Wishaw and Hamilton district have recently formed themselves into an institute for mutual improvement, and hold monthly meetings, where papers on mining subjects are read and mining knowledge disseminated. This can scarcely fail to be a most useful society.

During the past year the first ventilating fan in my district has been erected by Messrs. Robert Addie and Sons at Rosehall Colliery, and it is working satisfactorily.

Underground haulage by machinery is still being extended, the high rate of manual labour making it a necessity to dispense with it wherever possible.

The unprecedented demand for coal and iron during the past year has advanced the prices of these commodities, and the masters have dealt liberally with their workmen. Wages have advanced from 20 to 30 per cent.

In Lanarkshire an ordinary miner mined and filled from a room 14 feet wide, and in a seam $3\frac{1}{2}$ feet high, 952 tons of coal—

	£	s.	d.
For which he was paid - - - -	69	11	4
Less deducted for sharpening tools - - -	0	13	0
Ditto for medical attendance - - -	0	8	8
He worked during the year - - - -	279	days.	
Was idle - - - -	34	days.	

In Midlothian an ordinary miner and his son, now 16 years of age, mined and filled from a close room in a seam six feet high, 1,341 tons of coal and dross—

	£	s.	d.
For which they were paid - - - -	120	16	11½
Less deducted for house rent - - - -	3	8	0
Fire-coal and cartages - - - -	1	19	9
Doctors' fees - - - -	0	12	0
Pick-sharpening - - - -	0	12	0
They worked - - - -	291	days.	
Were idle - - - -	22	days.	

I have, &c.

The Right Hon. H. A. Bruce, M.P.,
Her Majesty's Principal Secretary of State,
Home Department.

RALPH MOORE,
Inspector of Mines.

LIST of FATAL COLLIERY ACCIDENTS, and LOSS of LIFE therefrom, in the EAST SCOTLAND DISTRICT during the Year 1871.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost.						
									Explosions.	Falls, Coal, and Roof.	In Shafts.	Miscellaneous.	Above Ground.	Total.	
1871.															
Jan. 1	1	Riggside	Douglas	James Swann	Alex. Gold	Collier	27	Run over by truck on engine plane. He was riding on it, against orders.	-	-	-	1	-	-	1
" 5	2	Redding	Falkirk	Redding Colliery Co.	Alex. Gray	Pit-head man	43	Ran hutch into shaft, and fell after it	-	-	1	-	-	-	1
" 13	3	Greenfield	Hamilton	Hamilton Coal Co.	Robert Brown	Collier	30	Fall of roof at stoops	-	1	-	-	-	-	1
" 13	4	Arniston	Gorebridge	John Christie	-	Engineman	25	Waggon ran amain and struck him	-	-	-	-	1	-	1
Feb. 6	5	Cornsolloch	Hamilton	Messrs. Cochrane	Andrew Penman	Collier	60	Fall of cage while ascending shaft	-	-	1	-	-	-	1
" 18	6	Quarter	Ditto	Colin, Dunlop, and Co.	Hugh Black	Ditto	14	Fall of coal at face while holing	-	1	-	-	-	-	1
" 21	7	Cleland	Holytown	William S. Dixon	Nicholas Reid	Ditto	22	Fall of coal at stoops	-	1	-	-	-	-	1
" 23	8	Chapel	Wishaw	W. S. Aitken	Andrew Muir	Overman	30	Drawing pumps with an old worn-out crane rope; it broke while he was on it.	-	-	1	-	-	-	1
" 25	9	Coltness	Ditto	A. G. Simpson	George Todd	Collier	30	Fall of roof	-	1	-	-	-	-	1
Mar. 1	10	Garriongill	Ditto	Coltness Iron Co.	Hamilton M'Gill	Ditto	25	Fall of roof at face	-	1	-	-	-	-	1
" 14	11	Cornsilloch	Hamilton	Messrs. Cochrane	Robert Kirkwood	Ditto	30	Ditto	-	1	-	-	-	-	1
" 17	12	Hill of Beath	Dunfermline	Ord Adams	John Hunter	Ditto	30	Fall of roof in main road	-	1	-	-	-	-	1
" 17	13	Green	Wishaw	Wishaw Iron Co.	George Stewart	Brusher	60	Engineman lifted the cage without signal before he got off, and crushed him between the cage and side of pit.	-	-	1	-	-	-	1
" 30	14	Limeridge	Slamannan	Forrester and Robson	John Pettigrew	Collier	13	Fall of coal at face	-	1	-	-	-	-	1
" 31	15	Shawfield	Wishaw	John Wilson	William Cairns	Hillman	20	Crushed by waggons at screens	-	-	-	-	1	-	1
Apr. 7	16	Thrashbush	Airdrie	Thrashbush Coal Co.	Willm. Carswell	Collier	60	Fall of roof at face	-	1	-	-	-	-	1
" 11	17	Quarter	Hamilton	Colin, Dunlop, and Co.	Francis Cadzow	Labourer	15	Fell from pit head. No gates	-	-	1	-	-	-	1
" 18	18	Haughhead	Ditto	Merry and Cunningham	Hugh Silver	Collier	40	Fall of roof at stoops	-	1	-	-	-	-	1
May 13	19	Fernigore	Ditto	Archd. Russel	Jas. Miller	Ditto	55	Fall of coal while holing	-	1	-	-	-	-	1
" 20	20	Motherwell	Motherwell	M. Fitzpatrick	John Watson	Ditto	27	Fall of roof at stoops	-	1	-	-	-	-	1
" 30	21	Kippis	Airdrie	Robertson and Eddie	John Wallace	Ditto	45	Fall of roof while working at stoops	-	1	-	-	-	-	1
June 2	22	Drummore	Musselburgh	Deans and Moore	James Greig	Ditto	14	Fall of coal while working at stoops	-	1	-	-	-	-	1
" 10	23	Pather	Wishaw	Coltness Iron Co.	Daniel Hamilton	Ditto	15	Fall of roof on road	-	1	-	-	-	-	1
" 13	24	Lochgelly	Lochgelly	Lochgelly Iron Co.	Archd. Hodge	Ditto	15	Fall of roof at face	-	1	-	-	-	-	1
" 27	25	Chapelside	Airdrie	Ferrier and Strain	Pat. Strain	Ditto	25	Fall of strata from sides of shaft	-	-	-	-	-	-	1
July 3	26	Cambusnethan	Wishaw	D. and J. Sneddon	John M'Tavish	Bottomer	14	Crushed by cage while crossing shaft	-	-	-	-	-	-	1

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situated.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost.				
									Explosions.	Falls, Coal and Roof.	In Shafts.	Miscellaneous.	Above Ground.
1871. July 14	27	Milnwood	Holytown	John Christie	Robert Mitchel	Roadsman	26	Fell from mid-working. He ran a hutch into shaft when cage was away.	-	-	1	-	1
" 24	28	Garriongill	Coltness	Coltness Iron Co.	And. Anderson	Onsetter	14	Run over by trams on engine incline. He was riding on the train, and it was flung off the road.	-	-	-	1	1
Aug. 5	29	Shawfield	Wishaw	John Wilson	M. O'hara	Collier	25	Fall of coal at face	-	1	-	-	1
" 24	30	Overton	Ditto	Ditto	John Morgan	Ditto	45	Fall of roof at face	-	1	-	-	1
" 29	31	Woodhall	Airdrie	Merry and Cunningham	Rob. Fotheringham	Drawer	13	Fall of roof on road	-	1	-	-	1
" 31	32	Polton	Dalkeith	Jas. Eaglesham	John Duncan	Blacksmith	45	Drum got out of gear and ran amain with deceased, and another man in kettle; they fell into 10 fathoms of water. It was at a sinking pit.	-	-	1	-	1
Sept. 5	33	Muirhouse	Wishaw	Archd. Russel	John Webster	Collier	36	Fall of coal at face	-	1	-	-	1
" 7	34	Neubattle	Dalkeith	Marquis of Lothian	Robert Davidson	Ditto	90	Fall of roof at face	-	1	-	-	1
" 7	35	Fernigore	Hamilton	Archd. Russel	Rob. Feely	Ditto	15	Explosion of firedamp at stoops, caused by a roadman putting his naked light to a fall where gas was.	1	-	-	-	1
" 7	36	Rosehall	Holytown	Robert Addie and Sons	Alex. Allen	Ditto	40	Fall of coal at face	-	1	-	-	1
" 14	37	Rameldrie	Cupar	M. Thomas	John Gulland	Engineman	60	Fell into hot water cistern	-	-	-	-	1
" 14	38	Starryshaw	Shotts	Muir and Thornton	James Adam	Collier	40	Fall of coal at face	-	1	-	-	1
" 29	39	Cambusnethan	Wishaw	D. and J. Sneddon	James Smellie	Ditto	26	Fall of top coal	-	1	-	-	1
Oct. 2	40	Mauldslie	Carlisle	Michael Burns	Will Goldie	Drawer	15	Run over by tubs. Incline rope broke when he was following tubs.	-	-	-	1	1
" 4	41	Coltness	Coltness	Coltness Iron Co.	John Connor	Collier	17	Fall of coal at face	-	1	-	-	1
" 12	42	Ditto	Ditto	Ditto	James Menzies	Ditto	23	Fall of roof at face	-	1	-	-	1
" 12	43	Haughhead	Hamilton	Merry and Cunningham	Henry Houston	Ditto	17	Fell down pit from mid-working	-	-	1	-	1
" 18	44	Balgownie	Markinch	Mr. Balfour	Henry Kerr	Ditto	21	Fall of coal while holing	-	-	-	-	1
" 18	45	Starlaw	Bathgate	Uphall Oil Co.	Francis Braddy	Ditto	40	Explosion of firedamp. Want of air	1	-	-	-	1
" 28	46	Over Johnstone	Wishaw	Wishaw Iron Co.	Thomas Scott	Roadsman	27	Fall of stone on road	-	1	-	-	1
Nov. 10	47	Bellsdyke	Airdrie	Shaw and Pettigrew	And. Martin	Collier	19	Fall of coal at face while holing	-	1	-	-	1
" 18	48	Netherton	Wishaw	Wishaw Iron Co.	Dan. Carlin	Roadsman	45	Fall of roof in road	-	1	-	-	1

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situated.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost.				
									Explosions.	Falls, Coal and Roof.	In Shafts.	Miscellaneous.	Above Ground.
71. Dec. 5	49	Balquhatstone	Slamannan	John Watson	And. Baxter	Collier	20	Fall of stone at face	-	1	-	-	1
" 15	50	Quarter	Hamilton	Colin, Dunlop, and Co.	John Semple	Pit-head man	17	Run over by waggons	-	-	-	-	1
" 27	51	Mosend	Helytown	Mosend Iron Co.	And. Wingate	Overman	55	Explosion of firedamp. Went into an old working with a naked light.	1	-	-	-	1
" 30	52	Ashgill	Larkhall	And. Spencer	John M'Lean	Assistant pit-head man.	14	Run tub into pit, gates off repairing	-	-	1	-	1
								Total in Coal Mines -	3	31	11	3	4
									52				
List of Fatal Accidents and Loss of Life in Ironstone Mines.													
Mar. 15	1	Balbardie	Bathgate	Mr. Walker	James Green	Roadsman	25	Jammed between waggon and frame	-	-	-	-	1
May 15	2	Woodhead	Ditto	Coltness Iron Co.	Wm. M'Alpine	Miner	18	Fall of roof	-	1	-	-	1
Sept. 26	3	Greenhill	Holytown	Robert Young	William Currie	Ditto	26	Stumbled in among machinery while drunk, and not on duty.	-	-	-	-	1
								Total in Ironstone Mines -	-	1	-	-	2
													3

Mr. Alexander's Report.

REPORT upon the INSPECTION of MINES in the WESTERN DISTRICT of SCOTLAND for
the Year ended 31st December 1871.—By WILLIAM ALEXANDER, Esq.

SIR,

Glasgow, 29th February 1872.

IN terms of the statute 23 & 24 Vict. c. 151, sec. 27, I have the honour to lay before you my annual report upon the mines and collieries in the western mining district of Scotland.

The rapid expansion of commerce in general throughout the kingdom has had a cheering effect upon the coal and iron trade of this district. During the latter half of the year unusual activity has prevailed in every department, and the production at present falls short of the demand. The prevailing tendency to further restriction of work does not improve this state of things; and, though the inducements held out to underground workmen are perhaps greater than have ever been offered before, they fail to attract a sufficient number into that particular channel of industry.

From the colliery returns, which have in nearly all cases been obligingly supplied, I find that the number of collieries in operation for the year now ended is 196. The number of persons employed in and about them, 19,561, and the quantity of coal produced, 6,554,365 tons, or thereby.

It does not appear from these figures that, in consequence of the extraordinary demands and remunerative prices, the rate of production has been greatly increased, and if a larger amount of material has been manufactured and used part of it must have been drawn from the stocks or accumulations of former years.

Unfortunately, seasons of activity in mines, from various causes, seem to have the effect of making men less careful and considerate. And from adverse circumstances of an unusual kind, the loss of life in and about the mines of this district has been excessive for the year now ended. From all causes, 285 accidents happened, causing injury to $1\frac{1}{2}$ per cent. of the persons employed, and of these, 51, or about one-fifth of those injured, died from the effects of their injuries. By reference to the accompanying schedule, No. 1, the different ways in which these fatal accidents took place will be found briefly explained. And in the following table, arranged for comparison with the preceding year, they will be found classified under the usual general heads.

Year.	Explosions.	Falls of coal and roof.	In Shafts.	Miscellaneous and above ground.	Total loss of life.
1870 -	2	13	7	0	22
1871 -	10	27	8	6	51

In my report for 1870 I took occasion to remark that the immunity from accidents was unprecedented in the mines of the west of Scotland for that year, and would probably be found exceptional. This observation has been quickly confirmed, and the foregoing table is a forcible illustration of it.

Some of these accidents, I regret to say, have been brought about by the most blundering recklessness imaginable, almost suicidal, and should never have taken place. It may possibly have a restraining influence for a time upon the more reflective, to note a few of these thoughtless irregularities. They convey a sad lesson, and exhibit forcibly the sorrowful effects which often result from acts of disobedience and neglect. Strictly speaking, they cannot be classed with the hazards peculiar to mining, though I am afraid they are almost inseparable, owing to the special nature of the occupation, which has a decided tendency to beget a spirit of rashness and unconcern. In practice, therefore, the careful and considerate workman has not only to guard against the dangers which constantly surround him whilst pursuing his underground labours, but he has also to

watch against the heedless proceedings of his fellow workman, who not only destroys himself, by disregarding prudent precautions, but others who are in no way responsible, and who are comparatively helpless in preventing such untoward calamities.

As a specimen of the neglect or want of care complained of during the past year, three mechanics went on a Sunday morning to make alterations upon the "throttle" valve in connexion with one of the winding engines at Govan Colliery. They deliberately took out the bolts which secured this piece to the steam pipes, and were in the act of pressing it off, when it was suddenly driven out by the force of the steam supplied from a number of large boilers, then at a pressure of not less than 30 pounds upon the square inch. Two of them were killed instantaneously, and the third survived only a few hours. They were all practical mechanics, two of them mature in years, their ages being 60, 45, and 22, of whom the oldest had been for upwards of 40 years employed in the working and construction of steam engines. In this case it would seem incredible that three intelligent practical mechanics could deliberately disengage the valve piece from the steam pipes, without first taking the precaution to shut off the steam connexion with the boilers, or exhaust the steam, which at the time was pressing actively against it.

At Corsel Colliery, near Kilwinning, while a "gang" of labourers were engaged filling up an old shaft, and restoring the surface, part of the woodwork, engine framing, and "barring" fell in, with a quantity of the surrounding stuff, and choked up the mouth of the shaft for about 20 feet. After some delay, and a few unsuccessful attempts to force away the rubbish and clear an opening, a run of water convenient to the pit was diverted from its course and allowed to play upon it. During the experiment two men actually went on to the top of the rubbish immediately over the pit, and with a pinch or rod commenced to partially move the stuff, with the view of aiding the water to force an opening, when it suddenly fell away, and they were hurled into the shaft with it. It is difficult to conceive a more rash and inconsiderate act, than for two men to place themselves upon a body of loose stuff, their only support, suspended in a shaft 50 fathoms deep, and to deliberately exert themselves to force it away.

Four explosions of fire-damp killed the 10 persons referred to in the column under that head, and at least three of these accidents were occasioned by foolhardiness and neglect. They happened in the usual way, the men being allowed to pass in to their work before the fireman had made his examination. In one of these cases, the most glaring, the explosion took place on a Monday morning. The ventilating furnace had not been attended to from the preceding Saturday, and I learned that the fireman on discovering the state of the furnace had re-kindled it, and after remaining in the neighbourhood for a few minutes had gone off with a number of workmen, for the purpose of making an examination of a section of the pit, where fire-damp was supposed to exist. It appears that they proceeded all together, carrying their naked lamps, which ignited a quantity of gas at or within a few feet of the face. Two were killed by the fire or flame, and two died, it is supposed, from the effects of the after damp. The other two cases had almost the same results, and were clearly occasioned by the default of the firemen in not making their examinations with safety lamps before allowing the workmen to enter to their work.

I endeavour to keep prominently before those who are charged with the general management of mines the importance of the morning examination, and that it should be carried out by a responsible man; indeed the fireman ought to be one of the most carefully selected and trustworthy officers about a mine.

At many of the collieries it is the rule for the fireman to examine the mine before the engineman shall allow the workmen to be lowered to their work. An additional precaution has been introduced at Eglinton Ironworks, where the accident referred to happened, by which four persons were killed by an explosion. The fireman, in addition to making his examination before the workmen shall be allowed to enter to their work, is bound to mark with chalk upon each working face the date of his examination. Every colliery owner professes by his special rules to have an examination of his mine made in the morning by a properly qualified fireman. Underground workmen, who trust their lives on the faith of the fireman's examination, are well entitled to ask for every possible security as to the manner in which this important regulation is carried out. And I think the following might be made a special rule at every colliery in this district: "That the fireman, in addition to his examination, shall leave his mark with chalk—the day of the month—upon every working place." There is nothing novel in this; it is a common-sense precaution, and perhaps the best proof that can be obtained of the fireman having performed his duty. No additional expense would be incurred in carrying it out, and if strictly observed it would be productive of much good.

From various causes, the state and condition of mines are constantly changing. Special work is unavoidable, such as cutting stone mines or forming connexions rendered necessary, on account of faults and dislocations. These works are frequently pushed by relays of workmen; sometimes two and three shifts in the twenty-four hours. When a place is being worked continuously, the one shift relieving the other, it might be urged that a system of examination by a fireman is not required for each relay of men. This may be so, but there is no security that these men will work every shift, and an accident might happen during their absence, from their mine becoming unsafe, and rendering adjoining places insecure. Several accidents have happened in this way.

It might be well to give men specially engaged as described additional instructions, and to impress upon them the necessity for using extra precautions, as, no doubt, their work is exceptional. But it should never be arranged to work a particular part of a mine, however limited, in the vicinity of working places, without the surveillance of the regular fireman, whose examination and care should extend alike to every part of the mine. To allow such a practice would be dangerous and subversive of good management. The absurdity of the system would be more fully realised if we could conceive each collier his own fireman, and this would only be an extension of the principle, that is, to make a special agreement with each workman that he should inspect and examine his own working place.

Falls of coal and roof varying in degree is a kind of accident common to all mines. The regularity with which these accidents happen grouped and averaged for a number of years is wonderful, while at the same time it is difficult to comprehend why they should be so different in one year from another. In 1870 the fatal falls of coal and roof were 13, and for the year now ended they amount to 27. The mines in operation have been much the same for both years. The seams continue to be worked under nearly the same conditions, and as the number of persons employed and the quantity of coal raised do not vary much, it might have been expected that the falls of roof would have represented a corresponding proportion. I do not think that any very good reason can be assigned for this. Falls of coal and roof take place in mines daily, and probably not more in one year than another, but the results when compared are very different. Sometimes a mass of roof falls with no baneful effects, as in the absence or where it falls clear of the workmen, and no record being kept of such occurrences the hairbreadth escapes which are made daily never become known. This kind of accident must be viewed as inseparable from mining, and to arrive at the best mode of alleviating the bad effects is all that, humanly speaking, can be done. There is not much room for ingenuity; it is simply a question of introducing temporary or permanent supports, to maintain the position of a body which has a tendency to fall after the coal is worked away, or the natural support withdrawn. In "longwall" work the roof is partly secured by wood and partly by building, while in "stoop and room" work the roof is mostly secured by wood. In either case a plentiful supply of wood is indispensable, and ought to be put up systematically at given distances without strictly inquiring whether it is absolutely necessary.

The accidents in shafts are very different from the class of accidents just described, and are nearly all preventible. The most fruitful source of accidents in and connected with shafts is from "midworkings." The seams in some parts of this district are so grouped that three and four are occasionally worked in one pit at the same time, the mode of raising the material being simply to stop the cage at the different landings to suit the requirements of each. Such a system of working involves a variety of signals which is not only confusing for the engineman, but the slightest deviation frequently leads to loss of life and destruction of property. The operation of placing the material upon the cage, however, is the most dangerous of all, as often through the inadvertence of the bottomer pushing the hutch into the wrong division of the shaft he is, in the absence of the cage, dashed with the hutch to the bottom of the pit. The provision proposed to be introduced into the new Mines Regulation Bill will, I trust, meet this long-felt want, and provide that all entrances between the top and bottom of every working and pumping pit shall be properly fenced so as to prevent persons from unwittingly pushing loaded hutches into shafts, or falling into them. By a rigid adherence to this regulation, a number of valuable lives will be saved annually. Where the seams are not a great distance from each other, a crosscut mine or mines concentrating them all at one level will be found a practical and safe arrangement. By this mode the varied and confusing systems of signalling are avoided; there is no division of responsibility as to signals, and one or two bottomers would be sufficient to see the hutches properly sent away, to keep order, and to enforce the usual regulations for safety in and connected with the shaft.

From miscellaneous causes above ground three accidents took place. Two of these have been referred to, and the third happened to a collier who had just reached the surface from his work, by getting jammed between two loaded coal waggons in one of the colliery lyes. The accidents under this head being of course variable, it would be vain to attempt to particularise precautions for each conceivable case. Referring to the filling up of old shafts however, as these openings in this district are very numerous and in nearly every case secured with wood from the surface to the rock, it frequently happens after they have been worked out, and probably abandoned for a number of years, that the wood securing the surface decays and falls in, the stuff immediately around the pit partially closing it, until by further subsidence it falls to the bottom. When a pit has been worked out, and after due deliberation it is not considered likely to be of any further use, it should be filled up, as by doing so the maintenance of fencing and upkeep is avoided. Regarding the manner of filling up these old shafts it may appear superfluous to make any remark, as the usages and experience of a district may be expected to have long since arrived at the most safe and efficacious mode of performing such a simple piece of work. I have not discovered from observation, however, that any proper general practice exists, certainly no safe methodical system, and a few narrow escapes have been made during the past year. Good substantial logs of wood of a sufficient length should be used in such cases, fixed together and laid across the shaft, extending for a considerable distance on each side of it, so as in the event of a sudden collapse or subsidence occasioned by the decayed "barring" falling in, the persons engaged might have a reasonable chance of escape.

In the ironstone mines of the coal measures and worked in connexion with coal or with any disused or exhausted coal mine, there were 10 accidents, detailed in schedule No. 2, involving the loss of 12 lives. Of these, three were killed by falls of roof, seven in shafts, and two from miscellaneous causes.

The difference of practice in isolated mineral fields caused by the varied conditions of the seams naturally suggested the use of special rules. In many cases these local usages might be modified with advantage by a more liberal blending with the customs of other districts.

The general rules, which have proved of immense value, grew up in this way. They are not based altogether upon the practice of one locality, but are rather an embodiment of what has been found specially valuable in any district. When first introduced they had to overcome a certain amount of prejudice, and were not alike appreciated in every part of the country. But it would be difficult now to do away with these regulations, and if not enforced by statute, I believe they would form part of the special rules in every important colliery. In future it would have an improving effect if these rules were revised periodically, and under such an arrangement improvements capable of general adaptation would speedily be brought into general notice and use.

Unquestionably a certain amount of training is as much required in mine management, as in directing any other branch of industry. There is at present a demand for skilled men of liberal and advanced views, and to supply this want is very desirable. The scheme proposed in the Mines Regulation Bill is a step in the right direction; it involves a delicate question, however, and it would be a mistake to suppose that a man is competent to conduct properly the details of a colliery, because he can satisfy a board of examiners as to his acquaintance with the general requirements of one. The main qualifications necessary, which I am afraid no education can supply, shrewd common sense, the faculty for leading men, and maintaining discipline, will fail to appear in an examination paper. They are, however, indispensable, and the country has hitherto been indebted to men gifted with such natural abilities, especially in this field of labour. It would be well therefore to provide greater facilities for their improvement, but I humbly submit it would be unfortunate if the test herein-after to be introduced should be so high as altogether to exclude them.

In accordance with former practice I have selected a few cases from schedules 1 and 2 for the purpose of exhibiting the value of discipline, and how for want of ordinary forethought some of the sad occurrences of the past year have been produced.

Accident No. 5, schedule No. 1, was occasioned by the cage being raised unexpectedly.

The pit where this unfortunate occurrence took place had just been sunk, and the deceased and his neighbour had been engaged forming a water lodgement and other preparatory work near to the pit bottom. I understand that on the morning of the accident they had finished a night shift and had signalled to be raised to the surface. As explained by the engineman he was engaged at the boiler fires at the time the signal was given, but a few minutes after he went in to the engine house, and not being aware that

the signal was to raise men, he started the engine and after "backing" it raised the cage.

The deceased's neighbour, who was at the pit bottom, reports that the signal made was to raise men, and as the ordinary back signal arrangement had not been completed, it was the practice for the engineman, before lifting away the cage, to slightly raise it, and afterwards set it back, which was the acknowledged signal for men to get on to the cage. In this case the deceased and his neighbour when they saw the cage being set back attempted to get on to it, but it was not put back sufficiently, and they did not succeed in getting quite on. The deceased got crushed between the cage and the shaft, but his neighbour escaped by throwing himself back out of the cage.

The defect in this case lay in the back signal, and if a right back signal had been in use, in all probability the accident would not have happened.

Accident No. 10, schedule No. 1, was occasioned by falling from a "mid working."

The deceased was a small contractor at the colliery. He was engaged driving a stone mine off the shaft, and shortly before the accident he had returned to the shaft from it, for the purpose of being raised to the surface. While standing close to the side of the shaft, awaiting the return of the cage, he in some way overbalanced himself and fell to the bottom a distance of 40 feet.

Accident No. 11, schedule No. 1, was occasioned by an explosion of firedamp.

On the morning of the accident, the fireman in making his examination discovered fire-damp in an advanced section of the work at A Fig. 1, and extending a few feet back.

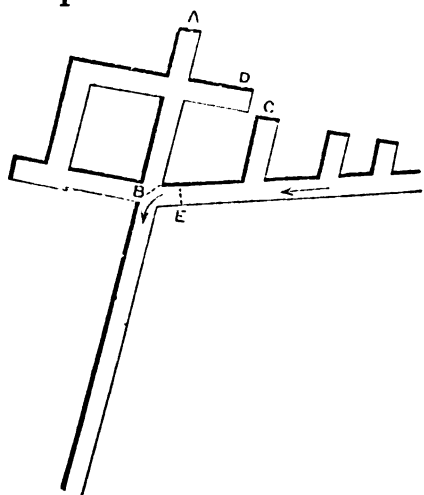


Fig. 1.

He properly kept the workmen out of it, and I understand placed a fence at B so as to prevent any person entering it. The manager who visited the pit shortly after, and when acquainted with the state of the "heading," directed that the "plane" C should be pushed through without delay upon the "end" D, and the deceased, father and son, were also appointed to construct a trap-door at E to be in readiness, so that when the places C D were connected, the ventilation might be carried direct to the face of the heading at A. As to the cause of the explosion, it seems certain that the deceased either ignited the gas at the fence B or inside of it nearer to the heading. In support of this view the boy's cap was found in the inside of the fence, and as workmen had been passing the point referred to, B, frequently on the morning of the accident with open lights, the inference is that the

gas lay beyond the fence, and could only be reached by passing within it. Apparently the range of safety did not extend far beyond the fence. According to the fireman it could not exceed nine yards; under such circumstances it would have been better to supply the deceased with safety lamps to work with, and prohibit persons from passing near to the fence with open lights till after the gas was dislodged.

Accident No. 16, schedule No. 1, was occasioned by the cage being raised without a signal.

The deceased was the bottomer, and at the time of the accident he was engaged placing a hutch upon the cage. From some cause, the hutch not being quite on, it was found necessary to draw it back, and the deceased was in the act of pushing it back when, without a signal, the cage was raised, and he was crushed between the cage and the side of the shaft. The usual steps were taken to prosecute the engineman for culpable neglect of duty, but a link in the chain of evidence was found to be wanting after the trial was fixed and witnesses cited, and ultimately the case was abandoned.

Accident No. 21, schedule No. 1, was occasioned by the breakage of the winding rope.

The deceased, a man and boy, were in the act of being raised, and had ascended about 35 fathoms, when the rope suddenly broke, and they were dashed to the bottom of the pit. In this case the rope, which was of wire, had originally been three inches in circumference, but at the place of fracture it, by wear, was reduced to $2\frac{3}{4}$ inches circumference; a few of the outside wires were also worn through and broken. Thirty-six feet were cut off the rope after the accident within three feet of the fracture, and prepared for testing. In that length six broken wires were found, and it broke when subjected to a strain of four tons, the Admiralty test breaking strain for a similar description of rope when new being 11 tons 14 cwt., and at $2\frac{3}{4}$ inches circumference, 10 tons.

Accident No. 26, schedule No. 1, was occasioned by an explosion of firedamp.

For 10 months or more previous to the accident a pair of mines were commenced in the main coal seam, for the purpose of communicating with the abandoned workings of an adjoining pit partly filled with water. They had advanced beyond the general face of workings 300 yards, and near to the point of connexion a dislocation of the strata was unexpectedly met with which necessitated some change. The deceased were at the time of the accident driving a crosscut stone mine for the purpose of forming a connexion at the proper level, and worked only during day. No one worked within 200 yards of them except a collier, Doran, who was employed in forming a "stow" mine, simply for depositing the stuff produced from their mine. The mine and Doran's place were ventilated by a split from the general current of air. Doran's place and the road leading to it were examined every morning by the fireman. The deceased, Baxter, had a contract for driving the stone mine referred to. He examined it for himself, and was supplied with a safety lamp for that purpose. On Saturday forenoon both places were clear of firedamp; on Monday morning following, about 6.30 a.m., Baxter and his neighbour passed in to their work with their naked lights. They met with firedamp before reaching Doran's room, which ignited at their lights, causing an explosion. Their bodies were found about 50 feet back from the road leading into Doran's room, which should have been examined by the regular fireman. It came out in evidence after the accident that, in consequence of Doran's place lying so far out of the fireman's way, being distant from any other works, that it was his custom not to make an examination of it until Doran went with him. Unfortunately, Doran did not come out to his work on the morning of the accident, and his place was not examined. If the fireman had examined it he would have discovered the gas which caused the explosion, and in all probability the accident would have been prevented.

This is another sad instance of the impropriety of excepting places in a colliery from the surveillance of the general fireman. If it had been the fireman's duty to examine every working part, then Baxter and his neighbour would have waited for his report. But as arranged, practically, their examination commenced at the point leading into Doran's place, where they kept their safety lamp, and outside of which the explosion happened.

The public prosecutor in this case charged the fireman with culpable homicide. He was tried in the Court House, Airdrie, by Sheriff Logie and a jury, found guilty, and sentenced to 30 days' imprisonment.

Accident No. 31, schedule No. 1, was occasioned by falling from a mid-working.

The deceased was a boy about 13 years of age, and was engaged as a drawer in the "Tourha" seam. He was about to leave off work on the night of the accident, and went with the person who employed him near to the shaft for the purpose of ascending. Being left alone for a few minutes it is supposed that in passing under a screen near to the pit his light had been put out, and in the dark he had unwittingly walked into the shaft and fallen to the bottom, a distance of 32 fathoms.

By the special rules of the colliery it was the duty of the manager to appoint a bottomer to make the required signals, and to look after the safety of the workmen while being raised or lowered. Those intrusted with carrying out the details of management wilfully failed to comply with this important regulation.

Accident No. 37, schedule No. 1, was occasioned by an explosion of firedamp.

The sufferers in this case were "redsmen," a class of workmen who, at this colliery, where the roof is tender and falls freely, are engaged during the night clearing falls which happen in the roadways, and in securing the roof with wood or otherwise when required. They descend regularly after the colliers' shift ceases. There was a deputed overlooker, and it was his duty to make the necessary examinations for the safety of the workmen engaged under him.

On the morning of the accident I understand that he sent the deceased and a neighbouring workman named Tullore to examine the roadways to the west of the main "incline." In the course of their examination they discovered a fall of roof in the west level, and about 120 feet from the face of it. From this point the current of air was guided to the face by brattice, which the fall of roof had apparently damaged; for, when Tullore inconsiderately went in towards the face of the level with his open light, he ignited a quantity of gas, which burned himself and fatally injured his companions.

These workmen were not provided with a safety lamp, and it appeared that in their examinations they used no precautionary measures.

Under the circumstances the deputed overlooker ought to have examined the roadways with a safety lamp before the ordinary workmen were allowed to travel along them with their open lights.

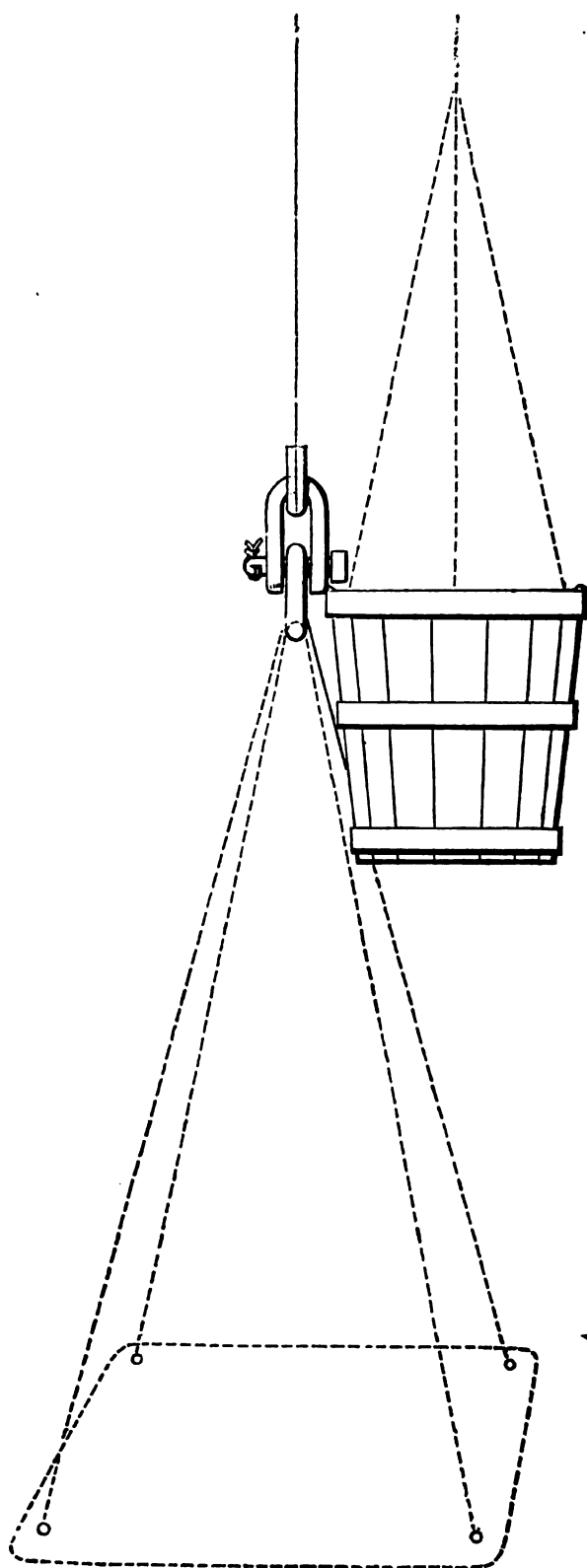


Fig. 2.

general use I believe that a nut screwed on to the end of the muzzle pin, and kept in place by a small rivet, is the most safe and secure.

The Right Honourable H. A. Bruce, M.P.,
H. M. Principal Secretary of State,
Whitehall, London.

Accident No. 6, schedule No. 2, happened at a sinking pit, and was occasioned by a scaffold getting disconnected in the shaft.

This accident, by which three lives were lost, is an exceptional one, and I do not recollect a similar occurrence during my experience.

The shaft was sunk by contract, by an intelligent sinker, of considerable experience, and well acquainted with such work. He was in attendance at the pit mouth on the day of the accident, and, according to his own statement, they were at the time engaged connecting a "set" of pump rods in the shaft. The deceased, three sinkers, were lowered in a kettle by the engine to the point where the connexion required to be made, and where a scaffold, suspended from a crane at the surface, was hanging. It appears that they got out of the kettle safely on to the scaffold, and signalled it away.

It was raised accordingly, but in passing the muzzle pin, which connected the scaffold to the crane rope, shown on hand sketch, Fig. 2, the iron hoop of the kettle caught the head of the muzzle pin and drew it out, disconnecting the scaffold, which fell away. There was a quantity of water in the shaft, consequently it was some time before the bodies could be recovered; one of the sufferers was the contractor's son.

In discussing with the contractor after the accident as to the insecurity of the muzzle pin, it being secured or kept in place by a strip of bucket leather, he explained that he put in the leather for safety, as being less likely to catch their clothes while being raised and lowered past it than a split iron cutter.

Often a mystery exists as to the cause of these uncommon occurrences.

In this case, however, there was no difficulty; the bolt was found at the bottom of the shaft with the leather in it entire.

A split iron cutter is often used for such purposes, and forms a simple connexion. Such a contrivance would have been effectual in preventing this accident, but for

I have, &c.

WILLIAM ALEXANDER,
Inspector of Mines.

SCHEDULE No. 1.

List of the FATAL COLLIERY ACCIDENTS, and Loss of LIFE arising therefrom, in the WESTERN DISTRICT of SCOTLAND, during the Year ended 31st December 1871.

Date.	No. of Accidents.	Name of the Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.
1871. Jan. 7	1	Bogend	Kilwinning	Eglinton Iron Company	James Bruce	Collier	50	Fall of coal while engaged taking it down.	-	1	-	-	-	1
" 20	2	Raw	Coatbridge	Wm. Baird and Co.	James Carson	Ditto	25	Fall of roof at face	-	1	-	-	-	1
Feb. 2	3	Grange	Kilmarnock	Robert Yeats and Co.	William Connor	Ditto	23	Fell off the cage whilst ascending	-	-	1	-	-	1
" 17	4	Drumpeller	Coatbridge	Henderson and Dimmock	Ambrose Turner	Ditto	67	Fall of roof at face	-	1	-	-	-	1
Mar. 13	5	Common	Cumnock	William Walker	Samuel Crosbie	Ditto	50	Crushed between the cage and the shaft, caused by misunderstanding of signals.	-	-	1	-	-	1
" 16	6	Dovecotwood	Kilsyth	Brown and Rennie	Hugh Johnstone	Ditto	50	Fall of roof	-	1	-	-	-	1
" 21	7	Springside	Dreghorn	Archd. Kenneth	Alex McDonald	Ditto	36	Crushed on one of the colliery lyes between two loaded waggons.	-	-	-	-	-	1
" 24	8	Barleith	Hurlford	John Galloway	James Garven	Ditto	18	Fall of roof	-	1	-	-	-	1
" 28	9	Mount Vernon	Baillieston	John Young	Robert Park	Ditto	17	Fall of coal	-	1	-	-	-	1
" "	10	Govan	Glasgow	W. S. Dixon	James Park	Ditto	56	Fell from a "mid-working"	-	-	1	-	-	1
Apr. 15	11	South Boig	N. Cumnock	Lanemark Coal Co.	James Penman	Ditto	40	Explosion of fire-damp	2	-	-	-	-	2
" 18	12	Cairnhill	Airdrie	Wm. Baird and Co.	John Penman	Boy	14	Fall of roof	-	1	-	-	-	1
" 20	13	Corsehill	Kilwinning	Eglinton Iron Co.	James Henderson	Foreman Engineer.	45	Falling down an old shaft which was in the act of being filled up.	-	-	-	-	2	2
May 24	14	Kirkwood	Coatbridge	John Hendrie	John Faulds	Labourer	20	Fall of coal	-	1	-	-	-	1
" 29	15	Redan	Stevenston	Merry and Cunningham	James Wallace	Collier	34	Fall of roof	-	1	-	-	-	1
June	16	Eastfield	Rutherglen	T. G. Buchanan	William Scott	Drawer	13	Crushed in the shaft by the cage being lifted without a signal.	-	-	1	-	-	1
" 24	17	Bogleshole	Tollcross	James Dunlop and Co.	Patrick O'Neil	Bottomer	19	Fall of coal	-	-	-	-	-	1
July 5	18	Enterkine	Ayr	George Taylor and Co.	Richard Gray	Collier	58	Fall of roof	-	1	-	-	-	1
" 10	19	Govan	Rutherglen	W. S. Dixon	James McCrorie	Ditto	26	Scalded by steam whilst repairing the throttle valve of steam engine.	-	-	-	-	3	3
" "	20	Drumnir	Kilmarnock	Merry and Cunningham	John Boyd	Engineer	60	Fall of roof at face	-	1	-	-	-	1
" "					Robert Reid	Ditto	45		-	-	-	-	-	
" "					John Binning	Ditto	22		-	-	-	-	-	
" "					John Little	Boy	14		-	-	-	-	-	

List of the Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of the Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.							
									Explosions.	Falls of coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.		
1871. July 20	21	Greenfield	-	Shettleston	-	William Kinnaird - Charles Neilson -	Collier - Boy -	44 - 14 -	{ By the winding rope (wire) breaking whilst they were being raised in the shaft - - - }	-	-	2	-	-	2	
Aug. 8	22	Townhead	-	Hurlet	-	John Gebbie -	Boy -	14 -		Fall of roof - - -	-	1	-	-	-	1
" 16	23	Grange -	-	Kilmarnock	-	James McChristie -	Collier -	50 -		Fall of roof - - -	-	1	-	-	-	1
" 23	24	Redburn	-	Kilwinning	-	Samuel Brown -	Brusher -	45 -		Ditto - - -	-	1	-	-	-	1
Sep. 4	25	Barleith -	-	Kilmarnock	-	William Copland -	Collier -	23 -		Ditto - - -	-	1	-	-	-	1
" 4	26	Calder Bank	-	Baillieston	-	Thomas Baxter -	Contractor -	50 -		Explosion of firedamp - - -	2	-	-	-	-	2
" 13	27	Bartonholm	-	Kilwinning	-	Robert Hutchison -	Collier -	50 -		Ditto - - -	-	-	-	-	-	-
" 20	28	Swineridgemuir	-	Beith	-	Matthew Porter -	Ditto -	54 -		Fall of roof - - -	-	1	-	-	-	1
" 30	29	Woodhill	-	Kilmarnock	-	James Pullonie -	Ditto -	54 -		Fall of coal - - -	-	1	-	-	-	1
Oct. 30	30	Bartonholm	-	Kilwinning	-	James Easton -	Oversman -	30 -		Fall of roof - - -	-	-	-	-	-	-
Nov. 1	31	Gauchalland	-	Galston	-	Thomas McQuade -	Fireman -	35 -	Explosion of firedamp - - -	4	-	-	-	-	4	
" 4	32	Holmes -	-	Ditto	-	Samuel Holmes -	Brusher -	36 -	Ditto - - -	-	-	-	-	-	-	
" 6	33	Cavinhill	-	Airdrie	-	William Graham -	Ditto -	38 -	Ditto - - -	-	-	-	-	-	-	
" 7	34	Bankhead	-	Galston	-	Charles McDonald -	Ditto -	40 -	Ditto - - -	-	-	1	-	-	1	
" 8	35	Blairdardie	-	Renfrew	-	John Clark -	Drawer -	13 -	Fell from a mid-working 32 fathoms.	-	-	-	-	-	-	
" 17	36	Bankhead	-	Sanguhar	-	John White -	Collier -	30 -	Fall of coal - - -	-	1	-	-	-	1	
Dec. 4	37	Gartshore	-	Kilayth	-	Neil Cochil -	Ditto -	23 -	Fall of roof at face - - -	-	1	-	-	-	1	
" 5	38	Hurlford	-	Hurlford	-	James Milne -	Bricklayer -	50 -	Crushed by the cage when crossing the shaft with a hatch.	-	-	-	-	-	-	
" 8	39	Kilmarnock	-	Kilmarnock	-	Walter Miller -	Collier -	46 -	Fall of roof - - -	-	1	-	-	-	1	
" 8	40	Barrachnie	-	Baillieston	-	David Walker -	Boy -	13 -	Ditto - - -	-	-	-	-	-	-	
" 29	41	Barleith -	-	Kilmarnock	-	Michael Dailby -	Brusher -	47 -	Explosion of firedamp - - -	2	-	-	-	-	2	
						Neil Harvey -	Ditto -	23 -	Ditto - - -	-	-	-	-	-	-	
						David Black -	Roadsman -	55 -	Fall of roof - - -	-	1	-	-	-	1	
						William Barbour -	Collier -	54 -	Fall of coal - - -	-	1	-	-	-	1	
						James Finnickan -	Brusher -	39 -	Fall of roof while engaged taking it down.	-	1	-	-	-	1	
						Thomas Goldie -	Collier -	30 -	Fall of roof - - -	-	-	-	-	-	-	
										10	27	8	-	6	51	

SCHEDULE No. 2.
LIST of the FATAL ACCIDENTS in IRONSTONE MINES, and LOSS OF LIFE arising therefrom, in the WESTERN DISTRICT of SCOTLAND, during the Year ended 31st December 1871.

Date.	No. of Accidents.	Name of the Mine.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Ironstone Mines.							
									Explosions.	Falls of Iron-stone and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.		
1871.																
Jan. 19	1	Twechar -	Kilsyth -	William Baird and Co. -	Nathaniel Wilson -	Miner	40	Fall of ironstone and roof at face -	-	1	-	-	-	-	1	
Feb. 23	2	Cadder -	Bishop Briggs -	Carron Iron Co. -	John Cleland -	Boy	14	Fell down the shaft from the surface -	-	-	1	-	-	-	1	
April 3	3	Rosehall -	Coatbridge -	Robert Addie and Sons -	William Jenkins -	Miner	43	Fall of roof -	-	1	-	-	-	-	1	
" 26	4	Glengyron -	Cumnock -	Eglinton Iron Company -	Hugh Carruthers -	Ditto	38	By gunpowder while blasting -	-	-	-	1	-	-	1	
June 13	5	Craigston -	Ditto -	Ditto -	James Frew -	Ditto	33	Fall of roof -	-	1	-	-	-	-	1	
July 13	6	Cadder -	Bishop Briggs -	Carron Iron Company -	Robert Higgins -	Sinker	35	By a scaffold on which they were standing getting detached from the rope -	-	-	3	-	-	-	3	
" 25	7	Inkerman -	Johnstone -	Merry and Cunningham -	David Shaw -	Ditto	28		-	-	-	1	-	-	-	1
Aug. 24	8	Quarter -	Denny -	W. Baird and Co. -	Robert Henderson -	Ditto	22		Was jammed in the shaft by the cage being lifted without a signal. -	-	-	-	-	-	-	1
Sep. 26	9	Fergushill -	Kilmarnock -	Merry and Cunningham -	Alexander Paterson -	Ditto	34	By gunpowder while blasting -	-	-	-	1	-	-	1	
					Hugh Lang -	Sinker	31	Fell out of the kettle while being raised in the shaft. -	-	-	-	-	-	-	1	
Dec. 23	10	Maid Pit, Common	Cumnock -	Eglinton Iron Company -	James Dixon -	Drawer	19	By getting entangled with the cage when it was about to be lowered. -	-	-	-	-	-	-	1	
									-	3	7	2	-	-	12	

Mr. Southern's Report.

REPORT on the INSPECTION OF MINES in the NORTHUMBERLAND, NORTH DURHAM, and CUMBERLAND DISTRICT, from the 31st December 1870 to the 31st December 1871.—By GEORGE WILLIAM SOUTHERN, Esq.

SIR, Newcastle-on-Tyne, 29th February 1872.

I HAVE the honour to report to you as to the Mining District of which I have charge as Inspector of Mines, viz. ; the Northumberland, North Durham, and Cumberland, for the year ending the 31st December 1871, and it affords me much pleasure to be able to record a diminution of fatal accidents as compared with former years.

The tabular statement below shows the number of fatalities and the causes from which they have arisen for the past three years.

There is one particular cause of gratification which I feel in making this annual Statement, and that is that there has been no case during the year in which more than one death has occurred from the accidents in my district.

	Separate Accidents.			Number killed.			Total, separate Accidents.			Total Deaths.		
	1869.	1870.	1871.	1869.	1870.	1871.	1869.	1870.	1871.	1869.	1870.	1871.
From												
Explosions of fire-damp -	2	3	1	6	5	1	2	3	1	6	5	1
<i>Falls of Coal and Stone.</i>												
Falls of coal - - -	5	7	4	5	7	4						
Do. of stone - - -	21	29	24	23	29	24	26	36	28	28	36	28
<i>In Shafts.</i>												
Over-winding - - -	—	—	—	—	—	—						
Ropes or chains breaking -	1	1	—	1	1	—						
Whilst ascending or descending	6	2	2	6	2	2						
Falling into shaft from top -	4	—	—	4	—	—						
Falling from part way down -	3	—	3	3	—	3						
Things falling down shafts -	—	3	—	—	3	—						
Sundries in shafts - - -	—	1	2	—	1	2	14	7	7	14	7	7
<i>Miscellaneous Underground.</i>												
Explosions of gunpowder -	1	2	—	1	2	—						
Suffocation by gas - - -	1	—	—	1	—	—						
Irruption of water - - -	—	—	—	—	—	—						
Falling into water - - -	—	—	—	—	—	—						
On incline and engine planes -	1	7	7	1	8	7						
By												
Trams or tubs underground -	13	14	9	13	14	9						
Machinery underground - -	—	—	—	—	—	—						
Sundries underground - - -	2	3	5	2	3	5	18	26	21	18	27	21
<i>On Surface.</i>												
Machinery - - - - -	1	2	1	1	2	1						
Boilers bursting - - - -	3	—	—	5	—	—						
Sundries - - - - -	8	10	8	8	10	8	12	12	9	14	12	9
Total - - - - -	- -	- -	- -	- -	- -	- -	72	84	66	80	87	66

Accidents, it may be expected, will occur in mines so long as mining operations are pursued, but I must acknowledge that, to say the least, the general feeling in my district

on the part of both owners and agents, I have every reason to believe, is that it is well to use all precautions necessary for the safety of the workmen and to reduce the number of accidents to the minimum.

The accidents from falls of roof and coal, as in others, still form a large portion of the number occurring in my district.

I would in my annual report draw particular attention to the mode of ventilation usually adopted, and would take the opportunity of advocating the use of mechanical appliance, and I think it the more necessary that attention should be given to it in my district from the fact of large goaves having, and particularly of late years, been formed from which stythe or black damp exudes, and such having been formed under the upper seams of the coal measures, and the lower ones having in some parts been much exhausted, attention is being more given to the working of the upper seams, in which explosive gas is found to some extent to be produced, and what I consider of equal if not of more importance is the fear that gas lodged in the goaves of the lower seams, which in many instances are not far separated by the natural strata from other workings in another seam of coal, may percolate through cracks or fissures formed by the lower working of the coal.

Those suggestions I commend most particularly to the consideration of the owners and agents in my district, and believing, as I have already stated, that they are generally ready to adopt any suggestion which they think will tend to the safety of the miners and mines, I trust those stated in this report will have their careful consideration.

The number of accidents from the falls of stone might I think be reduced by increased caution being exercised, and I would direct particular attention to the noticing of slips or fissures in the roof, and where the roof is at all liable to them that propping should be attended to by placing supports at not too great a distance from each other; and it is well known that those slips which appear too clearly after a fall of the stone are often previously sufficiently indistinct to escape ordinary notice, and I may observe that the stone is often afterwards found to have dropped from between those slips of such a thickness as to prevent any one jowelling it to ascertain really whether it is safe or not.

The firing of shots where safety lamps are used is a subject requiring serious attention; and even where naked lights are used, if they happen to be required to be fired in the vicinity of goaves or workings where explosive gas may possibly exist.

The firing of shots under any circumstances where explosive gas is liable to be found is in my opinion well to be avoided as much as possible, and to be kept within the limit as nearly as possible of districts where stone has to be blasted; and in these districts that especial care should be used to have the place where the firing of a shot is indispensable well examined by a competent person, and the foregoing remarks attended to.

I would draw attention to the necessity, under all circumstances, of having working places carefully examined by properly authorised persons previous to the miners and others going to work, and to a sufficient supervision during the time of their being in the mine.

Explosion of Gas.

There has but one fatal accident occurred from this cause during the past year in my district, and that happened at Frizzington Colliery, near Whitehaven. It was caused by and resulted in the death of a deputy overman, named John Litchford, and by his inadvertently going into a part of the disused workings where gas had been generated; but from inquiries I was informed that it had not been known to exist previously, and was not expected to be found, hence the want of caution by the deceased in not having used a safety lamp.

Fall of Stone and Coal.

From those causes there have occurred 24 fatal accidents from the fall of stone, and four from the fall of coal.

No. 4, in the list of fatal accidents, occurred at the Daisy pit, East Hartford, one of the Cramlington Collieries; a fall having taken place in the north-west way, deceased and a person named Thomas Nichol were sent to rid it away. From the evidence of Nichol it appeared that he and deceased had both thought the place, after jowelling it, quite safe. The master shifter had also examined the place a short time previously, and did not see any risk in the men working there.

No. 9. William Wharrier was killed at West Sleekburn Colliery on the 14th March. Joseph Dunn, a deputy, said that he was in the place at the time it happened, and had been for about an hour before, and that they had both tried the roof, and said they saw no indication of danger whatever. Another workman who was in the place at the time gave similar evidence.

No. 13 occurred at the Forster Pit, Seaton Delaval Colliery, on the 23rd March, in consequence of a fall of stone, which caused the death of Michael Crozier. He had, in attending to his work, and in coming out-by, met with a small fall of stone, which obstructed the passage of the pony and tub, of which he had charge, and whilst there a further fall of stone occurred, and was the means of the fatal result. The evidence at the inquest was to the effect that the place had shortly before been examined, and was not thought to be dangerous.

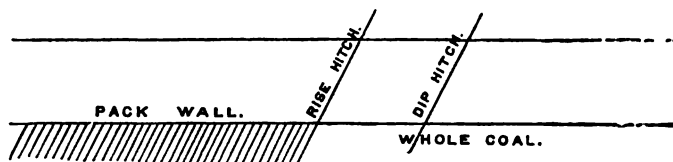
No. 11 occurred at Mickley Colliery, when Nicholas Newton, a hewer, aged 44 years, was killed by a fall of stone; his son had been working in the same place in the previous shift, and cautioned his father that some ramble or top stone should be taken down to make it safe. A prop had been set by the deputy, but unfortunately the place had not been sufficiently timbered to prevent the accident.

No. 18 happened to a collier named William Brown, at the Ellenboro' Colliery, on the 25th March, by a fall of coal. The place in which he was working being too low for the passage of the tubs, he was taking down some coal which had previously supported the roof, and in doing so a quantity of it fell and caused his death.

No. 22. On the 25th April Thomas Green, a hewer, aged 19 years, came to his death by a fall of coal, at the Chatton Moor Colliery, near Belford. The putter who was in attendance upon him said that he cautioned him that he was in danger, but unfortunately he did not heed the warning.

No. 39. A hewer named Martin Foy came to his death at Cleator Moor Colliery by a fall of stone and coal. Deceased and another hewer who was working with him at the time of the accident were said to have both examined the roof and thought it safe; props were placed, and deceased himself is said to have remarked that he was satisfied with the safety of it shortly before the unfortunate occurrence.

Accident No. 40 happened at the Guslet Pit, Ellenboro' Colliery, and in the Ratler Band seam; the position of the place being as below, the stone falling from between the



hitches or slips in the roof, as shown in the sketch.

Accident No. 43 happened at the Dudley Colliery, belonging to the owners of Cramlington Collieries, and caused the death of Thomas Stewart, aged 12 years. The poor boy, who was a trapper, was with another seated at the top of an incline, waiting for a set of tubs coming up, when the stone above the head of deceased fell, without apparently having given any previous warning, and caused his death. Robert Greaves, the overman, gave it as his opinion that the fall was caused either by a sudden outburst of gas or from a dampness in the superincumbent strata.

No. 48. At the Throckley New Colliery, on the 29th August, Robert Hunter, a pony putter, aged 15 years, was killed by a fall of band stone. He, it appeared, ought not to have been in the place at all where the accident happened, and had been cautioned previously not to go in, but unfortunately disobeyed orders given him.

No. 63 occurred at the Lintz Colliery from a fall of stone, and it was evident from what I saw of the place after the accident that the fall must have been so sudden as not to give sufficient warning for the deceased to avoid it.

The remainder of the fatal accidents from falls of coal and stone are all of a similar nature, and have arisen from unforeseen slips in the roof, and in all cases evidence was produced to show a sufficiency of timber for propping, if such had been thought necessary. The custom in this district is that deputies visit the working places one or more times in each shift, and that spare timber is left for the hewers, in the absence of the deputy who has charge of the timbering at the particular part of the mine, to place for the support of the roof if they find it necessary to place it.

On Engine Planes and by Tubs and Trams.

Accident No. 12 occurred on the 22nd March, an accident which proved to be fatal, at Broomhill colliery, to Roger Bradford, a driver, by his being caught whilst coming out-by with his pony by the set of tubs on the engine plane. On my inspection of the place where the accident happened I found it sufficiently wide for ordinary purposes, and the father of the deceased, who was employed in the same mine, gave evidence that he did not think anyone to blame. Mr. W. L. Armstrong, viewer and manager of the colliery, produced a plan of the part of the mine where the accident was occasioned

and gave evidence, which was perfectly satisfactory to the jury, and in accordance with which a verdict of accidental death was returned.

Shafts.

On the 13th May William Craven, a hewer, who was employed at the Montague Main Colliery, descended the shaft to go to his work, but having to stop at what is called a middle seam, he, instead of going in on the road leading to his working place, walked into the open part of the shaft, and thereby causing his immediate death. At the inquest sufficient evidence was produced to show that there was a proper provision of lights at the shaft, and that the accident occurred entirely through the error of the deceased. At the same time I advised the owners of the colliery to have further protection, when a part of the shaft was unoccupied by the cage at that seam, and particularly when persons were ascending and descending, which was promised to be attended to.

No. 25, John Hunt, a driver at the Wearmouth colliery, was injured on the 20th May, and was taken to the infirmary, at which institution he died, and an inquest in consequence was held on the 6th June. The evidence went to show that deceased was in the habit of driving at a quick rate, and on the day of the accident was coming into a siding too fast, when he was thrown from the tub on which he was riding by it coming in contact with a set of tubs, which was standing at the time in the other part of the siding, the latter not having been got clear of the way in which he was to drive.

No. 38. *Crushed between tubs and roof.*—North Seaton Colliery. William Harniston, a driver, died from an accident which happened at this colliery on the 10th July, by being crushed between the tub on which he was riding, and the roof of the mine or the timber which supported the roof.

No. 42. Wearmouth Colliery. On the 27th July, Carlyle Gooch, a driver, met with an accident at this colliery, which resulted in his death on the 31st of the same month. From the evidence adduced it was acknowledged by witnesses that deceased was riding on tubs contrary to regulations, but unfortunately the poor lad, who was only 13 years of age, transgressed, and probably was tempted to do so from the fact of the light of his safety lamp having by some means been extinguished, and expecting by riding on the set to get sooner outbye.

No. 47. On the 23rd August an accident occurred by collision with a set of tubs, resulting in the death, on the 28th of August, of Martin Owens, at Shipcote Colliery. It appeared suspicious that the lad attending an engine plane, which has a steep gradient, and on which it happened he had made a mistake in signalling the set of tubs away from the top of the incline without having been given the required signal from the bottom, and which was according to the regulations of the colliery, and was required to be repeated by him to the brakesman or tenter of the engine by which the plane is worked; but on the arrival of a witness (who gave evidence at the inquest) at the top of the plane, and who was with deceased at the time of the unfortunate occurrence, he said, in his evidence, that he found the lad at the incline brake so prostrate that he could get no information from him as to how it had happened, and that he was utterly unable to give any account as to the cause.

The other fatal accidents, as enumerated in the list attached to this Report, are all of the ordinary nature, and in no case during the year has any blame been attributed to the want of care on the part of the colliery officials.

Non-fatal Accidents.

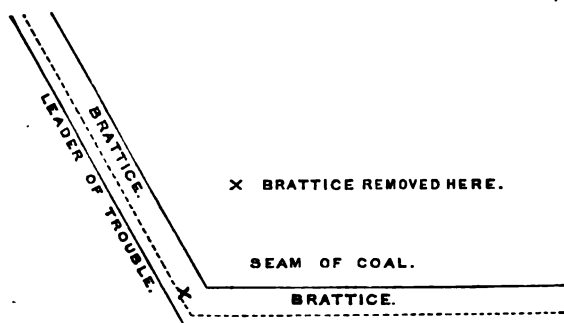
Falls of Stone and Coal. Of the non-fatal accidents there have been from falls of stone 5, and from falls of coal 6.

From Explosion of Gas. There have been 5 occurrences, and resulting in the injury to some extent of 7 persons.

One happened at the second pit, Beamish Colliery, on the 20th September, to 2 hewers, and it was one of those cases where gas is found where it had not previously been seen, and safety lamps not thought necessary to be used.

A case of injury occurred to a hewer at the Scott pit, Cramlington Colliery, on the 28th October, from his going up a drift that had been driven by the leader of the trouble, and which had during the working been aired by a brattice; but it being afterwards thought desirable to put in wooden boxes for that purpose, for the better ventilation the brattice was being removed, and a part of it had been taken away. The man injured had a safety lamp for use, but actually left it at the bottom of the drift and took a naked

light, which he also had with him, into the drift where the gas was lodged, and where if any was present at all it was most likely to be found. The sketch of the place is as below.



I was informed that the mining engineer of the collieries had given particular instructions that only safety lamps were to be used in this place, but the caution was on this occasion disregarded; and is, in my opinion, a strong proof of the necessity of the strictest care being taken to ensure the non-presence of naked lights in the vicinity of any part of the mine where safety lamps are required.

On the 6th December a slight explosion occurred at a new colliery called Dinnington, by which two men were slightly burnt, the workings in the Low Main Seam not having been sufficiently far advanced, and the colliery being in such an early state of development as it to be thought necessary only to use bratticed air. But it had been put in in such a manner, and with a canvas separation only at the entrance to the mine between the intake and the return air, that on the occasion of a stone falling down the shaft it broke through the brattice, and so destroying to some extent the circulation of the air by which the seam was ventilated.

Altogether there have been 39 non-fatal accidents reported during the year, the nature of which and the occupation of those injured being stated in the accompanying form.

There have been reported during the year 39 non-fatal accidents, and by which injury has been caused to 41 persons.

The occupations of the injured were as follows :—

Master sinker	-	-	-	-	1
Hewers	-	-	-	-	14
Putters	-	-	-	-	3
Drivers	-	-	-	-	9
Deputies	-	-	-	-	2
Shifters	-	-	-	-	1
Rolleyway man	-	-	-	-	1
Stone men	-	-	-	-	2
Trapper	-	-	-	-	1
Horsekeeper	-	-	-	-	—
Wailer	-	-	-	-	1
Back overman	-	-	-	-	—
Overman	-	-	-	-	1
Metal trailer	-	-	-	-	—
Wood leader	-	-	-	-	1
Heap keeper	-	-	-	-	—
Fireman	-	-	-	-	—
Miscellaneous	-	-	-	-	4
					<hr/> 41

And the nature of the accidents has been :—

Falls of stone	-	-	-	-	4
Falls of coal	-	-	-	-	6
Explosion of gas	-	-	-	-	7
Explosion of powder	-	-	-	-	3
Run over or crushed by tubs	-	-	-	-	10
Over winding	-	-	-	-	—
Miscellaneous	-	-	-	-	9
					<hr/> 39

I have, &c.

GEO. WM. SOUTHERN,
H.M. Inspector of Mines.

To the Right Honourable
H. Austin Bruce, M.P.,
H.M. Principal Secretary of State,
Home Department, Whitehall, London.

LIST of the FATAL COLLIERY ACCIDENTS, and LOSS of LIFE arising therefrom, in the NORTHUMBERLAND, NORTH DURHAM, and CUMBERLAND DISTRICT, during the Year ending 31st December 1871.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.						
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above Ground.	Total.	
1871.															
Jan. 4	1	Cowpen	Near Blyth	Straker, Cookson, and Co.	Wm. Scott	Hewer	23	Getting out of cage after starting	-	-	1	-	-	-	1
" 6	2	Sheriff Hill	Near Gateshead	R. Forster and Co.	Peter Freeman	Ditto	19	Fall of stone	-	1	-	-	-	-	1
" 23	3	Springwell	Ditto	J. Bowes and Partners	Wm. Buglass	Horse keeper	70	Caught by set on incline	-	-	-	1	-	-	1
" 24	4	Cramlington	Near Newcastle	Lamb, Potter, and Co.	Jas. Mortimer	Stone worker	37	Fall of stone	-	1	-	-	-	-	1
Feb. 14	5	Milgramfitz	Near Workington	Fletcher and Co.	Geo. Clark	Hewer	-	Cage being drawn away whilst he was getting in.	-	-	1	-	-	-	1
" 15	6	Harraton	Near Fence Houses.	Earl of Durham	Wm. Carr	Shifter	68	Fall from maudlin to hutton seam	-	-	1	-	-	-	1
" 16	7	Dearham	Near Maryport	J. and T. Walker	Jas. Graham	Driver	16	Crushed between tub and roof	-	-	-	1	-	-	1
Mar. 10	8	Wearmouth	Near Sunderland	Bell, Stobart, & Co.	Henry Chambers	Ditto	15	Crushed whilst riding on shafts	-	-	1	-	-	-	1
" 14	9	West Sleekburn	Near Morpeth	Bedlington Coal Co.	Wm. Wharrier	Hewer	35	Fall of stone	-	1	-	-	-	-	1
" 15	10	Cambois	Near Blyth	Straker, Cookson, & Co.	Peter Lang	Wailer	13	Crushed between waggons	-	-	-	-	1	-	1
" 16	11	Mickleby	Near Stockfield	Cookson and Co.	Nichs. Newton	Hewer	40	Fall of stone	-	1	-	-	-	-	1
" 22	12	Broomhill	Near Acklington	Sowerby and Co.	Roger Bradford	Driver	13	Killed by set on engine plane	-	-	-	-	1	-	1
" 23	13	Forster Pit, Seaton Delaval.	Near Newcastle	Burdon and Co.	Michl. Crozier	Hewer	17	Fall of stone	-	1	-	-	-	-	1
" 27	14	Isabella, New Mickleby.	Ditto	Throckley Coal Co.	Frank Maughan	Deputy	36	Ditto	-	1	-	-	-	-	1
" 30	15	Choppington	Near Blyth	Lambert, Nicholson & Co.	David Millar	Driver	17	By tubs	-	-	-	1	-	-	1
April 1	16	2nd Pit, Beamish	Near Chester-le-Street.	Joicy and Co.	David Scott	Hewer	20	Crushed by tubs on engine plane	-	-	-	1	-	-	1
" 2	17	Stanley Pit	Ditto	Ditto	Geo. Harrison	Ditto	58	Fall of stone	-	1	-	-	-	-	1
" 8	18	Ellenborough	Near Maryport	Harris	Wm. Brown	Ditto	50	Fall of coal	-	1	-	-	-	-	1
" 17	19	West Cramlington	Near Newcastle	W. Maud and Partners	John Young	Deputy	52	Fall of stone	-	1	-	-	-	-	1
" 20	20	Wearmouth	Near Sunderland	Bell, Stobart, and Co.	Patrick McGuiness	Hewer	32	Ditto	-	1	-	-	-	-	1
" 24	21	Scott Pit, Cramlington.	Near Newcastle	Lamb, Potter, and Co.	John Cook	Ditto	17	Ditto	-	1	-	-	-	-	1
" 25	22	Chatton Moor	Near Belford	W. K. Jackson	Thos. Green	Ditto	19	Fall of coal	-	1	-	-	-	-	1
May 13	23	Montagu Main	Near Newcastle	Thos. Benson	Wm. Craven	Ditto	53	Fell down shaft from Low Main	-	-	1	-	-	-	1
" 30	24	Cleator Moor	Near Whitehaven	Cleator Moor Iron Co.	Thos. Stutty	Ditto	26	Fall of fire clay	-	1	-	-	-	-	1
June 4	25	Wearmouth	Near Sunderland	Bell, Stobart, and Co.	John Hunt	Driver	15	Run over by set of tubs	-	-	-	1	-	-	1
" 11	26	Frizzington	Near Whitehaven	Musgrave and Co.	John Lichford	Deputy	-	Explosion of gas	-	-	-	-	-	-	1

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of Colliery.	Where situated.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above Ground.	
1871.														
June 17	27	Seghill -	Near Newcastle	Josh. Laycock and Co.	Mattw. Bink	Driver	12	Run over by tubs -	-	-	-	-	-	1
" 20	28	Forster Pit, Sea- ton, Delaval.	Ditto -	Lamb, Burdon, and Co.	Jos. Marshall	Hewer	23	Fall of stone -	-	1	-	-	-	1
" 21	29	Heworth -	Near Gateshead	Henderson & Co.	Henry Noble	Stoneman	29	Ditto -	-	1	-	-	-	1
" 23	30	Cowpen -	Near Blyth	Straker, Cookson, & Co.	Thos. Archbold	Hewer	21	Ditto -	-	1	-	-	-	1
" 24	31	Ditto -	Near Morpeth	Ditto -	Robt. Donkin	Ditto	54	Ditto -	-	1	-	-	-	1
" 26	32	Widdington	Near Morpeth -	W. Barkus and Co.	Thos. Anderson	Labourer	-	Caught by fly-wheel of pumping engine.	-	-	-	-	-	1
" 30	33	Cambois	Near Blyth -	Straker, Cookson, and Co.	Wm. Laws -	Hewer	22	-	-	-	-	-	-	1
July 6	34	Cramlington	Near Newcastle	Lamb, Potter, & Co.	John Dixon -	Small Tenter	12	Crushed between waggons	-	-	-	-	-	1
" 10	35	Usworth	Near Gateshead	G. Elliott & Co.	Jas. Dawson	Putter	15	Kicked by a pony	-	-	-	-	-	1
" 12	36	Marley Hill	Ditto -	J. Bowes and Partners	Wm. Donkin	Hewer	64	Falling off tub on rolley way	-	-	-	-	-	1
" 13	37	Cowpen -	Near Blyth -	Straker, Cookson, and Co.	Abrm. Newall	Ditto	51	Run over by sett -	-	-	-	-	-	1
" 10	38	North Seaton	Ditto -	Ditto -	Wm. Harmiston	Driver	15	Run over by tubs -	-	-	-	-	-	1
" 19	39	Cleator Moor	Near Whitehaven	Cleator Moor Iron Co.	Martin Fay -	Hewer	26	Fall of coal -	-	1	-	-	-	1
" 20	40	Ellenborough	Near Maryport -	— Harris	Jon. Simpkins	Ditto	30	Fall of stone -	-	1	-	-	-	1
" 26	41	Cowpen -	Near Blyth -	Straker, Cookson, and Co.	John Wilkinson	Deputy	-	Ditto -	-	-	-	-	-	1
" 31	42	Wearmouth	Near Sunderland	Bell, Stobart, and Co.	Carlyle Gooch	Driver	13	Run over by sett on engine plane	-	-	-	-	-	1
Aug. 1	43	Dudley Cram- lington.	Near Newcastle	Lamb, Potter, and Co.	Thos. Stewart	Ditto	13	Fall of stone -	-	1	-	-	-	1
" 8	44	Burradon	Ditto -	J. Bowes and Co.	Josh. Jefferson	Ditto	13	Crushed between tubs	-	-	-	1	-	1
" 10	45	Croft Pit, White- haven.	Near Whitehaven	Earl Lonsdale -	Edwd. Reay	Greaser	13	Run over by a rolley	-	-	-	-	-	1
" 14	46	Cramlington	Near Newcastle	Lamb, Potter, and Co.	Chas. Locke	Hewer	18	Found dead in the mine	-	-	-	-	-	1
" 28	47	Shipcote	Near Gateshead	J. Bowes and Partners	Martin Owens	Ditto	46	Run over by engine sett	-	-	-	-	-	1
" 29	48	Throckley New Colliery.	Near Newcastle	Throckley Coal Co.	Robert Hunter	Putter	15	Fall of stone -	-	1	-	-	-	1
Sept. 5	49	Kettle drum	Near Gateshead	D. Burn -	H. Davidson	Rolley way man.	40	Ditto -	-	-	-	-	-	1
" 6	50	Beamish	Ditto -	J. Joicey and Co.	J. Jopling -	Rider	23	Run over by waggons	-	-	-	-	-	1
" 26	51	South Medomsley	Ditto -	Bainbridge and Co.	J. T. Hall -	Driver	34	Fall of a piece of pyrites from screens.	-	-	-	-	-	1
" 30	52	Seaton Delaval -	Near Newcastle	Lamb and Co.	E. Vardy -	Stoneman	58	Fall of stone	-	1	-	-	-	1

List of Fatal Colliery Accidents—concluded.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.				
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above Ground.
1871.													Total.
Oct. 3	53	East Pontop	Near Gateshead	Bainbridge and Co.	F. King	Hewer	33	Crushed by cage	-	-	1	-	1
" 8	54	South Medomsley	Ditto	Ditto	P. Sevilla	Wailer	13	Fall of tub from gangway	-	-	-	-	1
" 9	55	Killingworth	Near Newcastle	J. Bowes and Partners	J. Morpeth	Shifter	56	Fall of stone	-	1	-	-	-
" 12	56	Wearmouth	Near Sunderland	Stobart and Co.	T. Ham	Driver	12	Crushed by tubs	-	-	-	1	-
" 11	57	Harraton	Near Chester-le-Street.	Earl of Durham	J. Birkett	Hewer	50	Fall of coal	-	1	-	-	1
" 17	58	Cramlington	Near Newcastle	Lamb, Potter, and Co.	S. Trevelthick	Deputy	29	Fall of stone	-	1	-	-	1
" 26	59	Towneley	Near Blaydon	Stella Coal Co.	Ralph Hedley	Hewer	50	Ditto	-	1	-	-	1
" 26	60	Bedlington	Near Newcastle	Bedlington Coal Co.	J. T. Beadnell	Wailer	12	Run over by waggons	-	-	-	-	1
Dec. 5	61	Springwell	Near Gateshead	J. Bowes and Partners	Wm. Lisle	Asst. Horse Driver.	13	Ditto	-	-	-	-	1
" 16	62	Dearham	Near Maryport	J. and T. Walker	Andw. Cameron	Shifter	47	Caught by incline endless chain	-	-	-	1	1
" "	63	Lintz	Near Gateshead	Lintz Coal Co.	Thos. Fenwick	Hewer	-	Fall of stone	-	1	-	-	1
" 22	64	Backworth	Near Newcastle	Maud, Taylor, & Co.	Jno. Thompson	Ditto	21	Ditto	-	1	-	-	1
" 22	65	Dinnington	Ditto	J. Bowes & Partners	Wm. Martin	Sinker	21	Fell off cradle in shaft	-	-	1	-	1
" 31	66	Whitehaven	Near Whitehaven	Earl of Lonsdale	Jas. Rhyle	Wailer	12	Suffocated by coal dust under the screens.	-	-	-	-	1
								Total	-	-	-	-	66

Mr. Wardell's Report.

REPORT of the WORKING of the MINES INSPECTION ACTS, for the YORKSHIRE DISTRICT, during the year ended 31st December 1871.—By FRANK N. WARDELL, Esq., F.G.S.

SIR,

Sandal House, Wakefield, 29th February 1872.

I HAVE the honour to transmit to you my annual report, as inspector of mines for the Yorkshire district, on the operation of the several Acts of Parliament for the regulation of mines, during the year 1871.

Both the number of separate fatal accidents and the loss of life exhibit a decrease in this year, being 80 and 84 respectively as compared with 83 and 90 in the previous year. Of the 80 accidents 76 resulted in the loss of a single life in each case, the remaining four causing two deaths each. These four accidents occurred at Hostingley Lane, Featherstone Main, and at Tankersley, where they were the result of explosions of gas, and at Orgreave, where a very large and unexpected fall of roof took place. It is very satisfactory that, notwithstanding the increase in the number of collieries, and the more abundant quantity of coal produced in this very extensive district, there is no corresponding augmentation in the mortality, but that on the contrary a diminution of casualties is recorded. While admitting this to be a step in the right direction, and duly thankful for it, much remains to be done, in order that this reduction may be followed up, and the lists brought down to a minimum.

There were seven accidents during the year from explosions of fire damp, producing 10 deaths, those in 1870 amounting to 11. The mortality from falls of roof and coal is reduced from 46 to 42; still a most deplorable total! The deaths in shafts show a decrease of one, and from miscellaneous causes underground of two, compared with the previous year, but the lives lost on the surface are augmented by two. The amount of coal raised in this district in 1870 was 11,545,400 tons, last year it was 12,801,260 tons, making an increase of 1,255,860 tons.

The number of lives lost in 1870 was 90; which gave a proportion of one death to every 128,282 tons of coal.

In 1871 the amount of coal raised was 12,801,260 tons, and the number of lives lost 84, or a proportion of one death to every 152,396 tons of coal.

The total amount of coal raised in the country was 117,439,251 tons, and the number of lives lost 1,075, which gives a proportion of one death to every 109,246 tons of coal.

Again there is a very large proportion of deaths (nearly 41 per cent. of the total) due to falls of coal and roof, the number being 436, and the total loss of life 1,075.

In 1867 this proportion was 38 per cent.

„ 1868	„	„	„	44	„	„
„ 1869	„	„	„	41	„	„
„ 1870	„	„	„	41	„	„
„ 1871	„	„	„	41	„	„

I must again advert to the subject of obtaining the necessary information for giving the aggregate production and the proportion of life lost from the owners of coal mines, and express my firm conviction that the present system places the Inspectors in an unenviable position. We ask for information from the owners which they may afford or withhold at their option, and therefore necessarily by asking we render ourselves under an obligation. I think this is liable materially to affect our relative positions, and as applicants suing for a favour, to place us at a disadvantage. I am impressed with the immense amount of usefulness the statistics when obtained are calculated to produce, and indeed all who are interested in the matter must admit their extreme value. I find the return in my district yielded with very few exceptions, and willingly, but this does not influence the fact that it is so yielded *as a favour*. The proportions and aggregate production which I submit to you are practically correct, the number of owners who either neglect

to afford the information or refuse it being exceedingly small, and, with one exception, the aggregate of their produce would not alter the total by many hundred tons—the one exception being Messrs. Charlesworth, who persistently refuse year after year to make a return, although it has been explained to them that the elimination of the produce of any single colliery from the aggregate, as published, is an impossibility, and that the return is treated as strictly confidential matter. I regard with much satisfaction the clause in the proposed Bill now before Parliament which renders the return of this most useful and valuable portion of our annual reports compulsory. During the past year some pits have been discontinued temporarily, some have been worked out and closed, and there have been several new ones opened out. There is no very material difference between the number at work in 1870 and those in 1871, the former being 417 and the latter 422, or an increase of five.

The district has still continued to rejoice in an immunity from any serious or protracted strikes or locks out. All must unite in acknowledging the value of this condition of affairs—on the one hand prosperity for both masters and men—continuous employment for the latter, and a mutual feeling of amicability between employers and employed. On the other—if not ruin—something very like it to each party—the trade gradually carried away from the district, and each side regarding the other with distrustful feelings. The unhappy effects of the weary struggles two years ago are fast disappearing.

Total number of collieries in the kingdom	-	-	-	3,100
Average do. do. for each district	-	-	-	258
Actual do. do. in Yorkshire	-	-	-	422
Total number of miners employed in the kingdom	-	-	-	370,881
Average do. do. for each district	-	-	-	30,907
Actual do. do. in Yorkshire	-	-	-	38,600
Total amount of coal produced in the kingdom	-	-	-	117,439,251
Average do. do. for each district	-	-	-	9,786,604
Actual do. do. in Yorkshire	-	-	-	12,801,260

In the years 1867-68-69, and 70, the total number of deaths in this district was in the ratio of 9·1, 8·2, 6·3, and 7·7 to each million of tons raised respectively. For the year 1871 the ratio is reduced to 6·5 per million tons, that of the aggregate of the mines in Great Britain being 9·15.

I have again to record a fatal accident in the Dales. It took place at the "West Pit," situated near Aysgarth, in Wensleydale, belonging to Messrs. Johnson and Company, on the 28th January. A miner named John Scott was killed by a fall of roof. The colliery is only a very small one, producing a very limited amount of coal, which is entirely for landsale. There did not appear to be any circumstances connected with this accident which call for any special remark of mine here.

SUMMARY of Separate Colliery Accidents in the Yorkshire District during the year ended 31st December 1871.

Explosion of fire-damp	-	-	-	-	7
Falls of coal or roof	-	-	-	-	41
In shafts	-	-	-	-	13
Miscellaneous underground	-	-	-	-	12
On the surface	-	-	-	-	7
Total	-	-	-	-	<u>80</u>

SUMMARY of Lives Lost in the above Accidents.

Explosion of fire-damp	-	-	-	-	10
Falls of coal or roof	-	-	-	-	42
In shafts	-	-	-	-	13
Miscellaneous underground	-	-	-	-	12
On the surface	-	-	-	-	7
Total	-	-	-	-	<u>84</u>

DEATHS from Shaft Accidents.

Things falling from surface	-	-	-	-	1
Falling from part way down	-	-	-	-	3
Things falling from part way down	-	-	-	-	1
Crushed by cage at bottom of shaft	-	-	-	-	3
Fell into wheel at do. do.	-	-	-	-	1
Got on cage when in motion and against orders	-	-	-	-	2
Being let down pumping shaft by windlass when handle slipped and he was run to the bottom	-	-	-	-	1
Fall of pipes in pumping shaft	-	-	-	-	1
Total	-	-	-	-	<u>13</u>

MISCELLANEOUS—UNDERGROUND.

Suffocation	-	-	-	-	1
On inclined planes	-	-	-	-	3
By trams and tubs	-	-	-	-	6
Crushed between revolving shaft and roof	-	-	-	-	1
Crushed by wheel at end of engine plane	-	-	-	-	1
Total	-	-	-	-	<u>12</u>

ON THE SURFACE.

Run over and crushed by waggons	-	-	-	-	6
Crushed by tub which ran down an incline hoist, owing to rope breaking	-	-	-	-	1
Total	-	-	-	-	<u>7</u>

LIST of COLLIERIES where FATAL ACCIDENTS have occurred in the years 1868, 1869, 1870, and 1871.

Owner's Name.	Name of Colliery.	Deaths.				
		1868.	1869.	1870.	1871.	Total.
Earl Fitzwilliam -	Simon Wood					
	Park Gate	2	1	1	2	6
	Low Elsecar					
Aldwarke Main Co. -	Aldwarke Main	1	—	1	2	4
	Car House	2	1	1	3	7
T. M. Carter and Co. -	Allerton Bywater	2	1	—	—	3
Farnley Iron Co. -	Osmondthorpe					
	Walsh	3	—	—	—	3
Newton, Chambers, and Co.	Thorncliffe	1	1	4	4	10
Cliffe Coal and Fire Clay Co.	Hollingthorpe	1	—	1	—	2
Lundhill Coal Co.	Lundhill	1	—	2	1	4
Jeffcock and Dunn	Carbrook	1	1	—	—	2
J. and J. Charlesworth's Collieries		6	2	—	4	12
Isaac Wood and Son -	Dean Lane and Harrop	1	—	—	1	2
	Edge					
Sturges and Co. -	New Gawber Hall	1	1	—	—	2
R. M. and Holmes Co. -	Holmes	3	1	3	3	10
Thrybergh Hall Co. -	Thrybergh Hall	1	—	—	—	1
	Tinsley					
B. Huntsman -	Nunnery	3	4	5	1	13
	Soaphouse					
Hird, Dawson, and Hardy	Low Moor Collieries	2	2	—	1	5
D. Wroe and Co. -	Heckmondwike	2	—	—	1	3
	Waterloo					
Sharlston Coal Co. -	Sharlston	1	1	—	2	4
Fence Coal Co. -	Fence	1	—	2	2	5
	Orgreave					
Greenhough and Co. -	Adwalton	1	—	—	—	1
Charles Winn	Nostell	1	—	—	1	2

List of Collieries where Fatal Accidents have taken place—*continued*.

Owner's Name.	Name of Colliery.	Deaths.				
		1868.	1869.	1870.	1871.	Total.
Monk Bretton Coal Co. -	Monk Bretton -	1	—	1	1	3
J. and J. Haigh -	Morley -	1	—	—	—	1
	Victoria -	—	—	1	—	1
	Sinking Wood -	—	—	1	—	1
Pope and Pearson -	Silkstone -	1	2	—	—	3
	West Riding -	—	—	1	1	2
Wombwell Main Co. -	Wombwell Main -	2	2	3	3	10
Mitchell and Co. -	Swaithe Main -	1	1	1	1	4
	Edmund's Main -	—	—	1	1	2
W. Ingham and Sons -	Wortley -	1	—	—	—	1
R. Hudson and Co. -	Stanley Collieries -	2	2	—	1	5
Silkstone Fall Co. -	Silkstone Fall -	1	1	—	—	2
Joshua Bower and Sons -	Allerton Collieries -	3	—	—	—	3
Manston Coal Co. -	West Yorkshire -	2	2	—	1	5
	Manston -	—	—	—	—	—
Kiveton Park Co. -	Kiveton Park -	1	1	—	2	4
Leather and Littlewood -	Ellis Laith -	1	—	—	—	1
Skinner and Holford -	Waleswood -	1	—	2	2	5
Bowling Iron Co. -	Bowling Collieries -	2	1	3	—	6
H. Briggs, Son, and Co. -	Methley Junction -	1	—	—	—	1
	Normanton -	—	—	1	—	1
	Whitwood -	—	—	1	—	1
A. Harding and Co. -	Beeston Manor -	1	1	—	—	2
J. Jackson -	Great Gomersal -	1	—	—	—	1
J. T. Leather -	Waterloo Main -	1	1	1	—	3
W. Ackroyd and Bros. -	Morley Main -	1	—	—	—	1
G. and J. Haigh -	Ravensthorpe -	—	—	—	—	—
	Alverthorpe -	2	—	1	1	4
	Dewsbury Moor -	—	—	—	—	—
Wharnccliffe Silkstone Co. -	Wharnccliffe Silkstone -	1	1	1	—	3
West Yorkshire Iron and Coal Co. -	West Ardsley -	1	1	1	1	4
E. Sutcliffe and Co. -	Victoria -	1	—	—	—	1
J. Baistow -	Norwood Green -	1	—	—	—	1
Blacker Main Co. -	Blacker Main -	2	1	2	—	5
G. Bailey -	St. John's -	1	—	—	1	2
Samuel Fox and Co. -	Stocksbridge -	1	—	—	—	1
Woolley Coal Co. -	Woolley -	1	3	2	2	8
Inspectors of Hoyland and Elsecar -	Hoyland and Elsecar -	1	—	—	1	2
Howley Park Co. -	Howley Park -	1	—	—	—	1
Locke and Co. -	St. John's -	1	—	3	1	5
	Kippax -	—	—	—	—	—
Staveley Coal and Iron Co. -	North Staveley -	1	—	—	—	1
Garforth Coal Co. -	Garforth -	1	1	—	1	3
Asquith, Bros. -	Howden Clough -	1	—	—	—	1
W. Day -	Mount Osborne Collieries -	1	2	5	2	10
J. Rhodes -	Woodthorpe -	—	1	1	—	2
Pitsmoor Coal Co. -	Brightside -	—	2	1	—	3
G. A. Haworth -	Silkstone Main -	—	1	—	—	1
Norwegian and Titanic Co. -	Neville Hill -	—	1	—	—	1
Firth, Barber, and Co. -	Oaks -	—	2	2	3	7
R. C. Clarke -	Old Silkstone -	—	1	—	—	1
Thorp's Executors -	North Gawber -	—	1	1	1	3
	Willow Bank -	—	—	—	—	—
Darfield Main Co. -	Darfield Main -	—	3	3	1	7
Wheldale Coal Co. -	Wheldale -	—	1	—	2	3
R. Craik and Co. -	East Gawber Hall -	—	2	2	1	5
Seth, Senior, and Sons -	Box Ings -	—	1	—	—	1
Lodge, Webster, and Scott -	Healey -	—	1	—	—	1
G. Watkinson and Sons -	Darton -	—	1	—	—	1
Townend Bros. -	Denholm -	—	1	—	—	1
Denaby Main Coal Co. -	Denaby Main -	—	3	4	2	9
Rhodes and Dalby -	Snydale -	—	2	4	1	7
	Sykes -	—	—	—	—	—
John Holmes -	Churwell -	—	1	—	—	1
Manvers Main Co. -	Manvers Main -	—	2	—	1	3
Stansfield and Co. -	Flockton -	—	2	—	—	2
Haynes and Co. -	Hall Royd -	—	1	1	—	2
Strafford Main Co. -	Strafford Main -	—	—	1	1	2
Hargreaves and Naylor -	Whinney Moor -	—	—	1	—	1
Chas. Wheatley -	Bradley Wood -	—	—	1	—	1
Hepworth Iron Co. -	Wood -	—	—	1	—	1
John Cawthera -	Four Lane Ends -	—	—	2	—	2

REPORTS OF INSPECTORS OF MINES.

List of Collieries where Fatal Accidents have taken place—*continued*.

Owner's Name.	Name of Colliery.	Deaths.				
		1868.	1869.	1870.	1871.	Total.
W. Wood - - - -	Foxholes - - - -	—	—	2	—	2
J. Marland - - -	Providence - - -	—	—	1	—	1
Messrs. Greaves - - -	Whitehill - - -	—	—	1	—	1
E. Heeley - - - -	Lane End - - - -	—	—	1	—	1
Chickenly Heath Co. - -	Chickenly Heath - -	—	—	1	—	1
Coopers, Sellars, and Co. -	Roundwood - - -	—	—	1	—	1
J. C. Ingham - - -	Thornhill Collieries -	—	—	1	2	3
Coopers and Co. - - -	Worsbro' Park - - -	—	—	1	—	1
Sellars and Co. - - -	Greasbro' - - - -	—	—	1	—	1
Trustees of R. and W. Garside	Killingbeck - - -	—	—	1	2	3
J. Sheard - - - -	Gregory Spring - - -	—	—	1	—	1
W. Horn - - - -	West Scafton - - -	—	—	1	—	1
Middleton Coal Co. - - -	Middleton - - - -	—	—	—	1	1
Trustees of H. Ellis - - -	Kirkstyles - - - -	—	—	—	1	1
Marriott Brothers - - -	Mirfield Moor - - -	—	—	—	1	1
W. Ward - - - -	Churwell - - - -	—	—	—	1	1
Featherstone Main Coal Co. -	Featherstone Main -	—	—	—	2	2
Crawshaw and Blakeley - -	Savile - - - -	—	—	—	1	1
High Stile Coal Co. - - -	High Stile - - - -	—	—	—	1	1
Park Coal Co. - - - -	Liversedge - - - -	—	—	—	1	1
Hall and Stones - - - -	High Royd - - - -	—	—	—	1	1
Johnson and Co. - - -	West Pit - - - -	—	—	—	1	1
G. Chambers and Son - - -	Grange - - - -	—	—	—	2	2
T. A. Mann - - - -	Rockley - - - -	—	—	—	1	1
Duke of Norfolk - - - -	Nunnery - - - -	—	—	—	2	2
		80	69	90	84	323
Total Deaths - - -		323				

Nature of Accident.	Number of Deaths.					
	1867.	1868.	1869.	1870.	1871.	Total.
Explosion of fire-damp - - -	1	6	1	11	10	29
Falls of coal and roof - - -	41	36	41	46	42	206
In shafts - - - -	18	11	7	14	13	63
Miscellaneous - - - -	17	13	15	14	12	71
Above ground - - - -	13	14	5	5	7	44
Totals of lives lost - - -	90	80	69	90	80	413
Totals of accidents - - -	84	77	62	83	80	386

MONTHLY STATEMENT of DEATHS caused by ACCIDENTS in the COAL MINES of the YORKSHIRE DISTRICT during the year 1871.

Month.	Explosions.	Falls of roof and coal.	In Shafts.	Miscellaneous.	Above Ground.	Total.
January - - - -	—	5	2	1	2	10
February - - - -	1	3	—	—	1	5
March - - - -	—	3	2	—	—	5
April - - - -	1	6	1	2	1	11
May - - - -	—	6	1	1	1	9
June - - - -	—	3	—	2	—	5
July - - - -	—	2	4	—	1	7
August - - - -	—	5	1	—	—	6
September - - - -	2	2	—	1	—	5
October - - - -	2	4	—	3	—	9
November - - - -	4	2	1	—	—	7
December - - - -	—	1	1	2	1	5
Total - - - -	10	42	13	12	7	84

Ten deaths during the year from explosions of fire-damp is a very close approximation to those in 1870. But so long as disobedience to orders, inefficient management, and a use of candles where safety lamps ought to be, continue, so long may we expect to find no considerable and regular reduction in the list of fatalities under this head, or indeed under any other. It is a very common and widespread idea, which is at the same time a popular delusion, that explosion of gas is the cause of by far the greater proportion of the deaths which result from accidents in coal mines. Now the easiest and truest refutation of this is, to turn to statistics, and taking my district, I find, that during the last five years, including 1871, the number of deaths caused by explosion is 29, the total deaths from all causes, 413, hence the proportion under this head is only $\cdot 07$ per cent. If the deaths from falls of coal and roof be submitted to the same test, it will be found that in the same time they amounted to 206, or 50 per cent., and to prove that this is not an exceptional district, I find the deaths from explosion of gas throughout the kingdom during the same time to be 1,150, the total deaths from all causes, 5,380, which gives a proportion of 21 per cent. The deaths from falls of coal and roof during the same period amounting to 2,207, or a proportion of $\cdot 41$ per cent. How is it that this error seems to be so generally believed in? Chiefly, I fancy, from the fact that now and then there comes some explosion, carrying death and destruction far and wide, which naturally excites popular attention, and from a case of this kind is argued the idea that more are killed in this way than the absolute facts demonstrate. The accidents causing deaths from *falls* are not so much noticed, as they seldom prove fatal to more than one or two persons at once; but they gradually accumulate, unperceived as it were, until at the year's end they have swelled into a number, representing from 40 to 50 per cent. of the gross total.

Although, however, the per-centage of persons killed through explosions of fire-damp is small, it ought not to be even so high as it is, and its reduction *must* depend upon the increased vigilance and care of all concerned. Those accidents which result from the incautious and most blameworthy practise of tampering with safety lamps, either by picking the locks in order to open them, or otherwise exposing a naked light are a striking proof of the estimation in which these safeguards to the collier are held by some. Not only do men under such circumstances (whether acting upon reflection or otherwise is best known to themselves) jeopardise their own lives, but those also of all their fellow workmen. It is of the most vital importance that the value of the safety lamp should be thoroughly instilled into the minds of all those who use it, and they should know when in a fiery mine that by its rightful use or its abuse they hold in their hands, life or death. All other means for securing safety should be attended to at the same time, and in no wise should any discipline be relaxed because of the safety lamp, but rather increased; still it must be remembered that any dis-arrangement of the ventilation, any sudden discharge of gas must inevitably be followed by an explosion, should it come in contact with a defective safety lamp, or one that has been tampered with. The lives of miners too frequently hang on a thread, and the smallest dereliction of duty on the part of any one may cause that thread to be broken. I cannot too strongly protest against the baneful system adopted in some fiery mines of allowing naked lights where safety lamps are used. The danger is alarmingly increased by such an arrangement, and no such mixed plan should be permitted. One means of reducing the list would be a greater amount of care and vigilance, more frequent examination and strict regard to the general and special rules, on the part of the deputies and those in authority in the pit. I allude to this with especial emphasis, as during the year accidents have occurred with reference to which these men have not in all cases proved themselves to be free from blame. It is of the first importance that deputies should thoroughly appreciate the *responsibility* which attaches to their office. I think it would tend to the greater efficiency of this staff, if a higher rate of remuneration were as a rule given them, by which the standard of such an important body would be raised. In very many instances a working collier will make higher wages than a deputy, and therefore no inducement is held out in order to obtain the best men for the position. A deputy, or as the night man is sometimes called, "fire trier," has to make a thorough and minute examination of that part of the pit assigned to him before the men and boys descend, and to this examination the latter are bound to trust implicitly. The presence or absence of gas, the state of the roofs and walls, the condition of the air ways, all are to be carefully noted, and I again take the opportunity of advocating the adoption of a *book* at the pit, into which these daily reports may be entered and signed. This system I am glad to say is gradually becoming more general. Efficient ventilation means a superabundance of fresh air, and not only so but this fresh air must be *rightly distributed* throughout the mine. Fresh air by means of splits and proper arrangement should be carried to the "face" of every working place. I stated in a former report and still adhere to my opinion, that the safest lamp for use in fiery

mines which are subject to sudden outbursts is the "Stephenson," and I also look upon the system of blasting in mines where such a precaution as the very safest known lamp is absolutely necessary, as a monstrous anomaly. The clause in the proposed Mines Bill which prohibits this is I think calculated to prove one of the most beneficial Acts of legislation. I am not of opinion that in well-known fiery mines, mines liable also to unforeseen outbursts, the owners will be so regardless of consequences as to do away with safety lamps in order to continue blasting operations. Another requirement for the safe working of the mines is ample sectional area in every road and air course. If this be small at any part, the air is necessarily diminished by friction and loses its power. The goaves should be filled close, or as much ventilated as possible, and when practicable air-roads left through them; the danger of accumulated gas proceeding from a goaf into the air-ways is always present when such is not the case, as it depends upon uncontrollable circumstances, such as an extensive fall of roof, or a sudden fall in the barometer. It is further most desirable that goaves should be so ventilated as that the air passing through them should communicate directly with the "return." In mines subject to sudden outbursts, increased ventilation no doubt lessens the danger, but it does not remove it, and in such cases the use of the safety lamp is the only true protection. The more universal the adoption of this latter, *in conjunction with* the application of an excessive quantity of fresh air will go far towards diminishing the casualties occasioned by explosions. The rule which specifies that a workman, if the "safety lamp shows any" appearance of fire-damp shall carefully draw down the wick with the picker," should be most rigorously observed, the impulse being on such an occasion to *blow the flame out*, a proceeding it is needless to say fraught with extreme danger. Added to all other precautions is the paramount necessity for the colliers themselves to exercise an increased amount of caution and attention to the rules. Let there be no tampering with the lamps, and on the slightest indication of fire-damp after having drawn down the flame, at once leave the place and inform the responsible deputy of the fact, for it cannot be denied that a large proportion of the accidents from explosions is due to the neglect of the rules on the part of the men themselves, against which adequate ventilation and the watchfulness of those in authority can never cope. A few remarks relating to some of the accidents from this cause I now proceed to lay before you. The accident, the leading incidents of which I am about to detail, brought to light a state of mismanagement, and general laxity of discipline at the colliery where it occurred, but for which no such fatality could have taken place.

The Colliery in question is Car House, near Rotherham, now the property of the Aldwarke Main Coal Co., and a boy named Thomas Hague lost his life in it, owing to an explosion of fire-damp on the 27th February; a deputy also named Hague (but bearing no relationship to the boy) being also very severely injured. On making an examination of the pit the day following the explosion I found that the gas had fired in an "ending" which was about thirty yards in advance of the last "slit" or airway. The ending however was properly bratticed up to the prescribed distance from the "face." The accident occurred on a *Monday* morning, a day on which I find a large proportion of the explosions to fall.

The deputy William Hague accompanied by Thomas Hague was making his diurnal examination of the working and other places in the pit, previous to the descent of the men and boys to their work. This was proper, and in accordance with a special rule. Had he been as careful to scrupulously carry out another important rule which specifies that such examination shall be made with a *safety lamp*, I do not think the accident would have taken place. The "ending" where the gas fired had been standing for four or five months previously but when examined on the Saturday was found in good order and quite free from gas, the brattice being then within four feet of the "face."

Hague, it appeared, had a candle with him in addition to his lamp, and when at the top of a "gate" in the second south level which communicated with the above-named ending he left his safety lamp, and proceeded with the candle, accompanied by the boy. The point where he left the lamp was about 150 yards from the scene of the explosion, and when he had advanced to within about five yards of the face, the gas fired, the boy being then close behind him. The result was the death of Thomas Hague, and such serious injuries to the deputy, that for some time his life was despaired of. I do not think words can express too strongly the shameful negligence and disobedience of this man William Hague, a responsible officer of the pit, one whose special duty it was to see the rules strictly carried out, and yet the very man to set all such rules, and common sense too, at defiance, and risk not only his own life but that of his companion. The disregard to orders however does not end here, and a further state of want of discipline was disclosed. Two doors situated in an "ending" off the engine plane, which were known to have been properly closed at 11.30

on the Sunday morning, the day before the accident, were found on the Monday morning open, tho' the deputy, Hague, had not been through them. The effect of the opening of these doors will be understood when I explain that the air was thus altogether cut off from the "ending" where the gas fired, hence any slight amount of gas which was being given off there, but which in the ordinary course would have been diluted and carried off by the current of air, accumulated and caused this catastrophe. It seemed that on Sundays it was quite a common custom for people to go into the pit. Colliers took any friends who might wish to see it, and in some instances women accompanied them, so that apparently parties were regularly made up and descended the shaft. The under-viewer and officials were ignorant of this, but the engineman, also a responsible person, knew it, and knew also he was doing wrong in letting them down. Now I maintain that for any one to have the *opportunity* of committing such breach of the rules as this, is proof of singular laxity in discipline on the part of all in charge, and at a well regulated colliery no such gross violation of the rules would occur. The day previous to the accident being Sunday was taken advantage of by a party of this kind and two men and two women went down into the pit.

Although there is no direct proof of the fact, I have no doubt whatever that these people tampered with the above-named doors, and hence with the assistance of the deputy contributed to bring about the explosion. The jury at the inquest most strongly censured the gross mismanagement at the colliery; and penalties were afterwards obtained against all the delinquents concerned before the magistrates at Rotherham.

The recklessness and disobedience sometimes displayed by colliers is fearfully exemplified by the following explosion of gas which took place at the Hostingley Lane pit, belonging to Captain Ingham, of seven men who were working in a certain portion of the pit, all of whom were more or less injured, five only survived to profit from the warning so terribly given.

The men in this pit work entirely by the aid of safety lamps, and a strict supervision as to their efficient state is exercised. On the 27th September these seven men, having received their lamps properly locked from the duly authorised lamp-keeper at the top of the pit, proceeded to their working places, which were situated in the lowest levels of the pit. They were "posting" or bringing back the pillars of coal, having driven their "benks" up to the "ending" above, and they were all nearly on the same line of "face." These places were properly and carefully examined by a deputy that morning before the men went to their work, and all was reported by him to be perfectly safe and free from gas. Nothing further transpired till about 9 o'clock, when the underviewer, who was in another part of the pit, was informed that an explosion had occurred, and on going to the place found such was the fact, and moreover that the "slack" in the goaf had caught fire. It was found necessary to drown this low part of the pit with water, and so it remained for the space of three weeks. At the end of that time it was considered safe to re-open the colliery; and an examination was partially made then of the workings, and partially afterwards, when I was present myself. As the result of such examinations, I regret to state the following facts were disclosed. In Robert Brook's place the lamp top and bottom were found separated. In Parkinson's place his lamp was found *unlocked*. Kitson's lamp was in a similar state. In H. Brooks' gate his lamp bottom was found, not the top, and in his trouser's pocket a *lamp key*. In the pockets of Rainey were lucifer matches. In Summer's pocket was a lamp key. Here a general violation of rules was apparent, and I think the cause of the explosion is pretty clear. R. Brook and H. Wilcock succumbed to their injuries, the remainder recovered. The lamp keeper deposed at the inquest to having missed a lamp key from his cabin some time previously. Doubtless the deceased had contributed to their own deaths, and the jury were unable to find that there was evidence sufficient to prove criminality on the part of anyone. I, however, obtained your sanction to proceed against the survivors for violation of special rules; but upon Captain Ingham expressing a desire himself to undertake the prosecution, you were pleased to allow him to do so. H. Brook, Parkinson, Kitson, and Rainey were accordingly brought before the magistrates at Dewsbury. The case against Kitson, from insufficient evidence, was dismissed. Brook and Parkinson were committed for one month, and Rainey for 14 days hard labour. The bench commented most seriously on the heinousness of the offence, and I think acted most judiciously in not allowing the men the option of a fine. It matters little how stringent the regulations may be if miners are, as in this instance, determined to disregard and set them at defiance, preferring to work with a naked light instead of a lamp, even when the naked light may mean death.

A striking instance of the carelessness and disobedience which is unhappily sometimes displayed by deputies is afforded by an explosion of gas which occurred at the Heather-

stone Main colliery near Pontefract on the 14th October. Serious though any violation of rules undoubtedly is on the part of the workmen themselves, such dereliction of duty when exhibited by responsible officers of the pit becomes immeasurably enhanced, and deserves the strongest condemnation. This colliery is a comparatively new one, and up to this date had fortunately been free from any fatal disaster. On the above-mentioned day, however, the spell was broken, and an accident occurred which proved fatal to two colliers. The workings of the pit were examined by the night deputy in the usual manner on the morning of the 14th, including of course the "benk" where Reynolds and Pitchforth (the two men who were killed) were working. In examining the "goaf" contiguous to this "benk" he found a small quantity of gas; gas was also detected in the "goaf" next the adjoining "benk," and it had been reported on the two or three days previously. The goaf was then standing for a distance of about 20 yards, and it was hourly expected to fall. Dixon, the deputy, ought clearly either to have forbidden the men to go to their work till the goaf had fallen and liberated the gas which was there (and which would then have mingled with the air and been diluted), or have ordered them to take safety lamps; but he argued to himself that there was no danger; that even if the goaf did fall the men would be all right with candles; and as for the special rules which interfered with this arrangement, he would take upon himself the responsibility of quietly ignoring them. Now, it is evident to me that gas existing in the goaf, and that goaf ready and expected to fall, a highly probable result of that fall would be the expulsion of the gas into the benk where Reynolds and his companion were working, and if they were using naked lights, a consequent explosion; and this is precisely what did occur. The goaf before closing would give some warnings, and the men's duty and instructions were immediately to come out; however it was proved they did not do so, and herein they themselves broke the rules and helped to cause the accident. Upon the goaf giving warning they had come out, *but went back* to take up some rails and do other work, and whilst so employed the fall took place and the gas fired at their candles.

The day deputy, Livesey, too was not altogether free from blame in the matter, for Dixon upon leaving the pit, told him of the existence of the gas in the above-named "benks," and that he had told the men to use candles. He, in addition, entered these facts in his daily report book. Livesey, strange to say, instead of making this place his first subject of inquiry, took no further notice, and went into some other part of the pit, intending afterwards to visit and examine the benk in question; but that "afterwards" was too late, and before he arrived there the explosion had occurred.

The adjoining "benk" to that occupied by Reynolds and Pitchforth, and when gas had been observed in the "goaf" on two or three days before, was being worked with safety-lamps; and I may here mention, as evincing extreme negligence on the part of the manager, who was cognisant of all these facts, that the air passed from this "benk" to the next, that is to say, the air having first ventilated a place where safety lamps were being used, and where gas was being given off, and become thoroughly vitiated, passed to the next "benk," where the men were working with naked lights! The coroner animadverted strongly upon the negligence and carelessness which was proved to have existed, and I heartily coincided with his remarks. This is a strong proof of the danger of mixing lamps with naked lights.

On the 9th November a man named Stephenson was killed at Nostell Colliery, near Wakefield, the property of Mr. Winn, by an explosion of gas. He had gone into a place which was standing and had been abandoned for some time 60 yards from his own working place, for what object is not known. This abandoned place was examined every alternate day, and on the seventh the deputy stated that it was free from gas; however, between the seven and the nine gas seems to have manifested itself, and upon Stephenson going there with a candle an explosion took place which cost him his life. The deputies at this pit also seem to have very strange and lax ideas as to their duties and responsibilities. Two of them, Heaps and Chambers, day and night deputies, admitted that when the one left the pit and the other came, they sometimes saw each other, sometimes not! and no report was made in any book as to the state of the pit. So that the deputy coming to take charge would on these occasions be in a complete state of ignorance as to the condition of the mine when his predecessor left it, and whether all appeared safe or not. Heaps further confessed that he did not make a point of always visiting every working place under his charge once during his shift!

Previous to the occurrence of this accident I had received a complaint as to the want of discipline at the colliery, and the inadequate arrangements for ventilation, and upon making an examination of the pit I found the charge not without foundation. Two slight explosions had taken place, though without inflicting injury upon anyone, and the laxity of discipline on the part of the deputies was very apparent both with regard to safety lamps and attention to the necessary system of bratticing. I felt it my duty to

call Mr. Winn's attention to these matters, and wrote him strongly on the subject, urging him also to make some change at the furnace. At present this latter consists merely of two ordinary fires, one placed on either side of the upcast shaft (which is also the one used for the ascent and descent of the men), and which are, in my opinion, most objectionable and wholly inadequate. As I understood it was contemplated to sink another shaft to the rise of the workings at no distant day, I urged that in the meantime a proper temporary furnace should be built, and the return air taken to the shaft by means of a drift.

In November the Tankersley pit at Thorncliffe experienced one of those outbursts of fire-damp which are so common in the Barnsley and Silkstone seams. This sudden irruption issued from the floor of the Silkstone seam in No. 2 bank on the south side of the dip workings. During the night and in the early morning, when the fire trier made his rounds he reported the ventilation as very good and no trace of gas visible; he had left his mark (the day of the month) in the bank where the gas was given off. Two colliers named Dickinson and Shepherd were working in the leading bank, the air traversing there after it had been to No. 2, and thence passing direct into the return and out at the "Newbiggin" shaft. There was a considerable extent of "goaf" standing in the proximity, and as it had begun to "weight" the men in No. 2 bank were engaged in levelling the floor which the pressure had raised, when the "weight" increased, and they came out once, sending a hurrier named Mellor to Dickinson and his companion to warn them of the circumstance and tell them to come out, according to the instructions which they had received. As they were obeying and coming down the "gate" the gas fired, and all three were burnt, Mellor alone surviving his injuries. They had Davy lamps, and it is presumed, though evidence could not be adduced to prove it, that in the hurry of running down the gate they had attempted to *blow* their lights out, and that one of them threw his down. Of course this is quite sufficient to account for the explosion. These were the only men working between the place of irruption and the return, and the outburst, fortunately not being of a very extensive character, did not back into the pit but was carried off straight through the return. I may state that, though the "weight" gave admonitory symptoms of coming on, the goaf had not fallen a fortnight after the accident. There did not appear to me to be blame attributable in this case, the pit having been duly examined that morning and found free from gas, and the men being all in possession of locked safety lamps. I recommended, however, that Stephenson's lamps should be substituted for Davy's generally throughout the pit. These outbursts occur when and where least expected, and so suddenly as to allow of no opportunity for preparation. The only and surest prevention exists in the use of Stephenson's lamps, (which have been the means of saving life in more than one instance of this kind) duly locked and in perfect order, with the strictest supervision exercised over their use. As I stated at the inquest, I do not think in an outburst of this kind, so sudden, and given off with such terrific force, an explosion could be prevented if a naked light or a defective lamp be in the neighbourhood, *however good and efficient the ventilation may be*. At a pit in this district some years ago, at which one of these outbursts took place, the gas exploded at the furnace, notwithstanding that in its course thither it was joined by an ample amount of air, more than 22,000 cubic feet per minute; but even this did not have the effect of so diluting it as to render it non-explosive. I do not imply that under *any* circumstances is the ventilation to be neglected, but in mines subject to such unavoidable outbursts, Stephenson's lamps appear to be a *necessity*.

And now with regard to "falls of roof and coal." Here, until the often repeated admonition to both managers and men as regards strict attention to the rules is understood and acted upon, we cannot reasonably hope for any material diminution in the present very high number of deaths. Safety means after all, increased expenditure of money; and this, looking at it in a humane point of view, I trust and believe very few owners would begrudge, but even as a matter of pounds, shillings, and pence, the additional amount—which, after all, is very trifling when spread over the whole cost of working,—is repaid with tenfold interest in the increased security thus obtained. This protection advanced by the masters must be met, however, half way by the men using their best endeavours to protect themselves. If the owner provides a sufficient number of deputies or others, and an ample store of timber, and if the deputies so appointed see that such timber is ready for use and within easy reach of the men, and make their visits to the working places *really* visits of careful examination, the rest of the responsibility hangs over the colliers themselves. For my part, I am of opinion that it should be incumbent upon properly authorised and qualified persons to set the props instead of leaving this duty to be performed, as it is at very many collieries by the men themselves. At the same time a stock should nevertheless be within reach of the miners, in order that, should contingencies arise, he may be

prepared to meet them. The necessity for examination of all places before the commencement of work is unanimously conceded, and there ought to be a sufficient staff of properly qualified officers in every colliery to allow of their visiting each man not only *once* as is at present the custom (sometimes not even that), but frequently during the day. There are many accidents, and always must be, which can neither be foreseen nor prevented, but outside this number there is a very wide margin for those attributable to the recklessness and obstinacy of the men. Cases are numerous where upon a deputy apprehending danger and directing a prop to be set the collier neglects to do so until, upon the deputy's returning and finding it still unset, he is obliged to remain with him in order to see his directions obeyed. As regards "spragging" too, or propping the coal when "holing" or cutting underneath, where the props are ordered to be set every two yards, there is the greatest difficulty in many mines to enforce its observance. Men, seemingly, preferring to run the risk of being maimed, or perhaps killed, to spending the short time necessary for setting these "spraggs."

What is wanted then to reduce the fatality under this head is a proper and sufficient staff of officers to observe the regulations applicable to themselves, and to enforce their observance by others, and a readiness and willingness on the part of the men to carry out the instructions so given.

Two out of the 42 whose deaths resulted from falls of coal and roof were killed at the Orgreave Colliery on the 3rd May by a fall of roof. This colliery has recently become the property of the Fence Coal Company, who work the adjoining mine. I made an examination of the scene of the occurrence on the 5th of May, and could not ascertain that in this instance blame was attributable to either the men themselves, or to any of the officials of the pit. The accident though lamentable enough in itself is relieved from very much of its gravity by this fact, which I wish could be oftener the case in casualties of this nature. The men were engaged in "posting," or working off a pillar of coal, and the fall took place from a "slip" in the roof. The place showed evident tokens of having been well and carefully timbered, and had been duly examined by the deputy. The mass which fell was a solid quadrilateral piece, and was wedge shaped on each side, both "sides" and "top" being as smooth as glass. I think it was about the largest fall of the kind I ever remember having seen, and I have no doubt it would drop suddenly and without any previous warning, while to anyone examining the roof by striking it, no evidence of danger could be detected, as the sound of a hammer would be solid as a bell. No doubt the two men considered themselves perfectly safe, as the deputy had also done.

Following the order of the list, the next class of accidents has its origin in and about shafts. The number so killed in 1871 is still very high, being only one less than that of the year preceding. In charging shots for blasting in sinking pits, or elsewhere, an iron pricker should on no account be used, and it is imperative that the rule which prohibits the drilling out of a missed shot, should be strictly observed; it is further very necessary that after a missed shot, a reasonable time should be allowed to elapse before it is returned to. I have not had a single case of overwinding, which, when the enormous multitude of persons daily ascending or descending the 422 pits in my district is considered, reflects credit upon the management relating to the hauling apparatus at each pit and the engine-men themselves. The careful and daily examination of shafts, all machinery connected therewith, the testing of the ropes and chains, and seeing that the signals are in proper working order, are amongst the most likely measures for securing greater immunity from accidents about shafts. I again draw attention to the self-acting gates at the tops of the winding shafts, which I consider ought to be universally adopted.

On the 1st April a man met with his death in a sinking shaft at Dewsbury Moor, the property of Messrs. Haigh, through the falling upon him of some brick walling. But for the ignorance of the steward, H. Sharp, I do not think this accident would have happened. The shaft called No. 2 was about 140 yards deep, and 12 feet in diameter. About two yards from the bottom a drift was being driven through to another shaft. This drift was about six feet high and six feet wide. The shaft was walled, each length of walling resting upon a crib, the bottom length being about 15 yards long. Joseph Rowley, the sinker, who was killed, had charge of the shift of men at the time of the accident. One of the men, Seaker, proceeded down the shaft with Rowley in the "trunk." About 20 yards from the bottom, Rowley got off into a chamber to do something to the air pipes. At this chamber was only another man named Thompson. Seaker continued his descent to the drift, when he and a man called Senior commenced to work. They heard something "scatter" in the shaft, and called to Rowley to come down and see what was wrong. He came down and examined the shaft sides, and the crib, and no doubt seeing that it was giving way called up the shaft to be drawn up, but almost immediately the crib gave

way, and the whole 15 yards of walling fell in and buried him. The two men in the drift, and Thompson who had remained on the chamber, providentially escaped. Upon examining the place I found that the drift had actually been "turned in" within a foot of the crib-bed, and that, notwithstanding it had progressed between four and five yards, there was no arch built, or any preparation made for arching. The drift was driven by orders of Sharpe, who committed, in my opinion, a grave error in judgment in neither at once commencing to arch it, nor leaving a greater space between it and the bottom of the crib. There had been no shot fired in the shaft that day, and the sides of the shaft and tackle had all been duly examined by the unfortunate man, Rowley, at the commencement of his shift.

Another shaft accident occurred at Killingbeck Colliery, near Leeds, owned by the trustees of R. and W. Garside, on the 4th July, whereby a sinker named John Stewart lost his life. This shaft had just been sunk from the Beeston bed to the Black bed, the depth to the former being 84 yards, and to the latter 164 yards. There were pumps in the shaft, and on the 24th June Stewart changed the bucket, which was four yards above the Beeston bed, and afterwards fastened the chain, which was attached to the end of the capstan rope, securely round a stay. This chain was about 9 feet long, and $\frac{1}{2}$ inch thick. On the fourth July a scaffold which was suspended in the shaft six yards from the bottom was required to be lowered, and Stewart and a man named Summers went down the shaft to effect this. Having arrived at the place where the chain had been previously secured to a stay, they proceeded to unfasten it, in order that it (the chain) might be lowered by the capstan and be attached to the scaffold. Previously to this the men had made an examination of the shaft and found all safe. Having unfastened the chain from the stay, they were lowered to the scaffold and awaited the descent of the chain, which was of course being lowered much more slowly than they themselves. When they had been at the bottom about five minutes, from some cause or other the chain broke, and four feet of it fell from about 30 yards above them upon Stewart, killing him. No broken link could be found, and the chain appeared to be a sound one. Stewart himself was in charge, and therefore the examination of all the chains and ropes devolved upon him. Whether the chain had been damaged when used last, in changing the bucket, it is impossible to say, but then, too, Stewart happened to be the man in charge, and he it was who fastened it to the stay in the shaft, and who also unfastened it just before the accident. He bore the reputation of being a careful and steady workman.

Another accident in connection with shafts occurred at the Nunnery Colliery, near Sheffield, on the 11th July, when a boy named Joseph Pidcock was killed by falling from part way down in stepping out of the cage. Owing to a fire which had taken place at the top of the Parkgate shaft the men belonging to that pit were temporarily using the Silkstone shaft to get to and from their work in the Parkgate seam, which is there situated 100 yards above the Silkstone seam. Some precautions had been taken by Barker, the under-viewer, in order that the men might get out of the cage at the Parkgate seam without danger. They were ordered to get out on the South side of the cage only. On that side the shaft was boarded over close to the cage. There being no similar arrangement on the other, men were stationed on both sides of the shaft with lighted oil lamps at the entrance to the seam, and the deputy, who was one of them, called out as each cage arrived for the occupants to get out on his (the south) side. Notwithstanding, the unfortunate boy before he could be prevented stepped out at the north side, even before the cage had ceased running, and fell down the shaft. There seemed to have been sufficient light at the seam, and three or four cages of men had already been lowered in safety. Barker himself was present at the top telling each on which side to get out. The only neglect seemed to me to be that the temporary boarding, or scaffold, did not extend to *both* sides of the shaft. One of the deputies, it appeared, had received instructions to do this, but owing to want of time, or from some other excuse, had not completed his work, which, if finished, might have been the means of preventing the casualty.

The underviewer at the Savile Pit near Dewsbury, belonging to Messrs. Crawshaw and Blakeley was killed whilst being lowered down the pumping shaft on the 4th November, owing to the officious interference of an engine man named Thornton. John Mellor, the deceased, had been in the habit of going down the shaft to change the bucket, or do other work about the pumps when requisite. His descent was effected by means of an ordinary windlass, with a handle attached to either end, the rope passing over a pulley situated above the shaft. A lad named Alfred Rhodes had let him down on three or four occasions previous to the day on which the accident occurred, and on that day he was assisted by another lad named Woodcock who worked the second handle. This was according to the directions given by Mellor, whose motive was probably the fact that he was taking down with him a bucket, and hence the weight would be considerably

increased. The handle which Rhodes held was fast on, and the other one was not. Having fastened the bucket on to the chain above him, Mellor got on the "chair" and was lowered by means of the above described apparatus. When about 15 or 16 yards down, George Thornton an engineman who had been standing at the engine-house door, came to the lads and said, "you are not going quick enough," took hold of Rhodes's handle, and told him to "leave loose," and Woodcock to take his handle (which was not fast) off. This was done; and Thornton from his position, having a very insecure hold of the handle, was overpowered by the weight and unable to retain his hold. The consequence of course was, that the unfortunate man Mellor was run violently to the bottom of the shaft, and received such injuries as to cause his death very shortly afterwards. There did not appear to me to have been any blame attaching to anyone save Thornton, for from the construction of the windlass I think the lads would have had quite sufficient power to have lowered a much heavier weight. The diameter of the larger wheel was 30 inches, that of the pinnion wheel being four, or in the proportion of one to seven and a half, the purchase clearly being very great. It did not appear that the lads had found the weight too much for them, or had called for assistance, and the interference of Thornton was unwarrantable, as the deceased himself was the man to whose orders all the others were amenable, and who was responsible for their safety and his own. I do not think Thornton had been actuated by any feeling save that of officious meddling, and appeared to have been on good terms with Mellor. At the inquest which was held, the jury returned a verdict of manslaughter against George Thornton.

At Swaith Main Colliery near Barnsley, the property of Mitchell and Company, an assistant hanger-on named William Morson was killed at the bottom of the shaft on the 2nd December by the descent of the cage upon him. The accident appeared to have resulted from an unfortunate misapprehension on Morson's part as to which cage was descending.

The full corves are drawn up the engine plane on to the bank head, and from this point there is a slight decline to the shaft. At the time of the accident a full corf was standing on this incline, and near the shaft, Morson was in the act of turning it on to a side road, when the load of full corves just drawn up the plane came against it and knocked it into the shaft bottom; he turned round and stepped into the same place to pull it out, thinking no doubt at the moment, that he was in the side of the shaft from which the cage had just been drawn up, instead of which he stepped under the descending cage which immediately struck and crushed him. The poor fellow bore a good character for steadiness and carefulness, and I could not see that blame was attributable to anyone. At the same time there were one or two matters connected with the arrangements at the bottom of the shaft which seemed to me to be capable of improvement. And upon my recommending the owners to make an additional siding from their bank top, so that the full corves could if necessary be turned off on to it instead of running direct to the shaft, and also that as much of the pit porch as possible should be arched, so as to do away with a profusion of props placed there to support the roof, and which are sadly in the way, they at once promised me the matters should be attended to.

I have to record a solitary instance of death from suffocation by carbonic acid gas.

A young man named Senior Rangeley, a collier, employed at the Kirkstyles Colliery, the property of the executors of the late Henry Ellis, lost his life under circumstances reflecting the greatest discredit on the management.

I may mention that the original owner, H. Ellis, was the unfortunate man who was killed the previous year by incautiously entering a mine near Barnsley which he was desirous of leasing, as described in my report for the year 1870.

The pit is a small one, some 22 yards deep, and affords work to only three or four colliers. The accident occurred in the following manner:—

Rangeley, on coming to the pit on the morning of the 28th June, was lowered down the shaft by Walter Peace, an assistant banksman, by means of an ordinary Jack roll. When he had reached the bottom he called out to be drawn up. Peace, assisted by a collier named Fox, at once proceeded to do so, but before he had ascended three yards he fell out of the corf. Thomas Fretwell, another collier who was present, immediately went down and tried to lift Rangeley into the tub, but he also was overpowered by the black damp and fell down. Water was then thrown down the shaft by those at the top, which revived Fretwell sufficiently to enable him to get into the tub, and so he was drawn to the top, though afterwards he had no recollection whatever of getting into the tub or of anything which happened after the gas overpowered him. Kilner the steward afterwards came and with assistance succeeded in getting Rangeley's body out of the pit. I found upon investigation a terrible state of mismanagement to have existed at the pit. The means for procuring ventilation was wholly inadequate, the upcast shaft was shallower than the downcast, and from the bottom of the former boxes

were carried through a drift into the latter, up which the return air was supposed to pass. A "fire-pan" was placed in the upcast which was sometimes lighted, sometimes not. Sometimes a man went down to light it in the morning before the men descended, sometimes he did not. Occasionally the workings were examined before the commencement of work, and it seemed to me that whoever arrived at the pit first, collier or steward, did this or not, as it happened. On the morning of the accident Fox stated that he had been to the fire-pan and "stirred it up, as it was very low and there was a good deal of smoke," but Rangeley was the first man who went into the downcast shaft. Of course, with proper discipline, this would have been prevented by the banksman, who would have known such to be a violation of the rules. Such a general state of uncertainty pervaded the whole affair, that Kilner even denied that he was the steward, or had anything to do with the management, though the contrary was proved from the paybooks. When I visited the pit the day after the accident I was unable to descend the shaft, and a lamp which I lowered was put out by the black damp when little more than half way down.

The day before the accident the men were unable to work in the pit owing to the black damp, and it is natural to suppose, this being the case, proper means would have been taken to clear the pit, and that some extra caution would have been exhibited the next morning. Instead of this however, nothing was done, and the official in authority was the last to appear on the scene on the morning of the 28th.

At the inquest the jury expressed their opinion in the verdict that while the deceased had contributed to his own death by descending under the circumstances, there was very great carelessness on the part of the owners and manager. Having obtained your sanction I instituted proceedings against Mr. Chambers, one of the executors for violation of the first general rule, and against Kilner the manager, for violation of special rules, and they, pleading guilty, were respectively fined.

I found also that at this same pit a boy, Henry Dickinson, was employed, who was only nine years of age. For this offence likewise, with your sanction, I proceeded against Mr. Chambers, upon whom a further penalty was imposed.

The majority of miscellaneous accidents underground are caused by trams and tubs and on inclined planes. These happening so, during 1871, do not call forth any special remark here, there being nothing of unusual character in their occurrence. I, however, beg to call your attention to the two accidents caused by machinery, a description of which I append. Under the category of accidents which arose on the surface is one upon which I offer a few observations. The remaining six out of the seven above ground were caused by persons being either crushed or ran over by waggons.

One of the accidents caused by machinery under ground took place at Aldwarke Main Colliery, near Rotherham, on the 16th October.

The sufferer in this instance was a boy called Frederick Wright, 13 years old, who was employed as an assistant to the hanger-on at the shaft bottom. A short distance from the shaft is fixed an engine, having a drum on either side of the way. The shaft which connects these two drums is about five feet from the ground and about six inches in diameter. On the day of the accident Wright seems to have been playing about here, and as there happened to be two corves standing almost under the revolving shaft, he mischievously attached a short chain to one of them and threw the other end of the chain over the shaft. The corves were immediately drawn up and crushed him to death against the shaft. Although this occurred within a few yards of the engineman, he had not time to stop the engine before the boy was killed. This revolving shaft seemed to me to be exceedingly dangerous, stretching as it did right across the main intake and under which men and boys had to pass constantly, and there was another objection to its being there, viz., that the horses being unable to pass that way to and from the stables were obliged to travel in the *return* and under the upcast shaft! I strongly urged upon the manager the necessity for doing away with the revolving shaft, several other methods being preferable, as for example both the drums could be placed on the the same side of the way and the rope carried underneath to the opposite side, by means of a horizontal wheel. It was promised that this should be done.

The second accident of the same class occurred to a young man named John Worgan, on the 8th December at the Woolley Colliery, near Barnsley. Tubs pass up and down the engine plane by means of an endless rope, which works round a pulley fixed at the end of the plane. After the cessation of work at nights this rope is fastened by means of "clams" which are fixed at a certain point in the plane. On the morning of the accident Worgan, who during the night had been engaged in cleaning the roads, was sent by the master shifter, between five and six o'clock, towards the part of the workings in which the above-named pulley was situated, to see that the way was all in proper

order. He would appear to have sat down, when arrived at the pulley, on the "tram" or "lurry" on which is fixed the wheel, and to have fallen asleep. Towards six o'clock on the rope being moved he was crushed between the wheel and a prop which stands by the side of the tram, and so severely injured as to cause his death. The master shifter on leaving him had cautioned him that it was almost time for the engine to start. Circumstantial evidence strongly pointed to a collier as having interfered with the "clams" in going into his work, and unfastened them in order to allow his tub to pass; the consequence of this was that the rope stretched to the amount of that which was lying slack, being only a foot or two, but sufficient to crush the deceased. However, no direct or positive proof could be obtained, and the jury at the inquest returned a verdict of accidental death.

I recommended the manager to adopt for the future some means of *locking* the clams and thus prevent any tampering by unauthorised persons. This he promised me should be done.

On the 3rd May an accident occurred at the Nunnery Colliery, Sheffield, now worked by his Grace the Duke of Norfolk, which resulted on the 17th of the same month, in the death of Joseph Hague, a banksman. The following are the chief incidents connected therewith.

An incline exists at the top of the pit by which tubs are drawn up to a screen the inclination is 1 in 2, and the foot of it close to and on a level with the mouth of the shaft. The rope working on this incline on the morning in question broke, and the tub then about two yards from the top, ran violently back down the incline, tore up an iron "flat shut," which would weigh about a ton, and forced it against Hague, who was between it and the weigh cabin. I found upon investigating the matter, that the rope which broke was a wire one and had been, after lying unused upon the drum of an engine for two or three years, applied to its present purpose some three weeks previous to the accident. On the day before the occurrence James Armytage, the engineman, after examining the rope, found it in a very bad condition and with several of the wires broken. He reported this to the enginewright, Barkby, who was in charge above ground, and said he did not think it safe. Notwithstanding this, no immediate steps were taken to change the rope, and the sad catastrophe the next day proved the correctness of Armytage's views.

The jury at the inquest returned a unanimous opinion that there was great blame in allowing the rope to be used when in an improper and unsafe condition.

I may add that from my own examination of the rope after the accident I was perfectly satisfied from its condition that the engineman must have been perfectly justified in making the report he did.

I am again able to have to record only one death in the Ironstone mines in this district during 1871. This occurred at a pit the property of the Low Moor Company, and was of the ordinary character of those accruing from falls of roof.

With regard to the employment of boys below the age of 10 years only one case of has come under my observations, and the owner was most justly punished for so gross a violation of the law. In cases where boys are employed above 10 and under 12 I always find the necessary certificates forthcoming. In the thick seams it is noticeable that the masters have a decided objection to employing such boys, as older ones are more suitable, and do not entail the responsibility and trouble of procuring such certificates, but in the thin mines, which form a very large proportion of the whole in this district, the employment of boys under 12 is indispensable. Owing to the peculiarities of the seams, unless they enter the mine early in life it is impossible for them to adapt themselves to it, and the raising of the standard of age in these localities would be tantamount to the closing of a large number of pits.

Mills and factories which abound in the districts referred to have a most magnetic influence, in opposition to the pits, and boys who have passed the age of 12, are drawn thither by the higher rate of wages, and the fact that the employment is above ground and attended with less danger. I do not think, at the same time that the opportunities for obtaining education should be made less rare, but on the contrary rather increased, for it is deplorable to find the numberless instances of the absence of information even on the commonest subject, which are manifested. Information, too, of a practical nature should be afforded, and the more this is attended to, the more likely are we to possess in our deputies and responsible officers (who are selected from the ranks of the working colliers) properly qualified and trustworthy men. I would repeat what I have formerly stated that in too many instances the managers themselves, of small collieries in particular, are wholly unfit to discharge the very onerous responsibilities of the position they hold, and the fault of this is reflected upon the owners, who

hold out no inducement in the shape of equivalent remuneration in order to obtain efficient men. I admit with thankfulness this state of affairs is year by year disappearing, but much too gradually considering the interests at stake.

I have received from time to time a number of complaints, some with, some without foundation. As regards anonymous communications, though at all times inquiring into their truth, I hold that such are very much to be condemned, and they generally convey the impression that where the complainant is ashamed to avow himself the cause has no very substantial grounds. I find where alterations are necessary or rectification desirable, all recommendations of mine are justly and fairly attended to, and the cause of complaint when existing, removed.

As regards inspection I cannot do more than state that my opinion thereon as stated in my Report for 1870 remains unchanged. I believe the present *system* works exceedingly well, and Inspectors, in securing the observance of the rules, in giving advice to the best of their ability in all cases where they apprehend danger, in attending to all complaints, and making an examination of the state of any pit alleged to be unsafe, and in enforcing the Acts of Parliament, do all that is required or expected. I still think that a moderate increase in the staff would act beneficially and enable the larger districts, this being certainly one, to be sub-divided.

I have, &c.

FRANK N. WARDELL.

To the Right Hon. H. A. Bruce, M.P.,
Her Majesty's Principal Secretary of State.

LIST of the FATAL COLLIERY ACCIDENTS, and LOSS of LIFE arising therefrom, in the YORKSHIRE DISTRICT, during the Year 1871.

Date.	No. of Accidents.	Name of the Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.							
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above Ground.	Total.		
1871.																
Jan. 2	1	Victoria Stanley	Wakefield	R. Hudson and Co.	Geo. Hargreaves	Collier	49	Fall of roof	-	1	-	-	-	-	1	1
" 7	2	Darfield Main	Barnsley	Darfield Main Coal Co.	Jos. Cooper	Labourer	18	Crushed by waggons on surface	-	-	-	-	-	-	1	1
" 13	3	St. John's	Normanton	Locke and Co.	Elam Aston	Collier	35	Fall of coal	-	1	-	-	-	-	1	1
" 19	4	Sharlston	Ditto	Sharlston Coal Co.	William Priest	Loco. fireman	17	Run over by waggons on surface	-	-	-	-	-	-	1	1
" 19	5	High Royd	Barnsley	Hall and Stones	S. Waddington	Hanger-on	31	Fell into wheel at bottom of shaft	-	-	-	-	-	-	1	1
" 23	6	Thrybergh Hall	Rotherham	J. and J. Charlesworth	W. Brooke	Collier	21	Fall of coal	-	1	-	-	-	-	1	1
" 23	7	East Gawber	Barnsley	R. Craik and Co.	John Wood	Hurrier	11	Fall of roof	-	1	-	-	-	-	1	1
" 25	8	Waleswood	Sheffield	Skinner and Holford	H. Rowbotham	Furnace man	64	Got in the cage when in motion	-	-	-	-	-	-	1	1
" 27	9	Wombwell Main	Barnsley	Wombwell Main Co.	William Riley	Driver	15	Run over by corves	-	-	-	-	-	-	1	1
" 28	10	West Pit, Aysgarth.	Wensleydale	Johnson and Co.	John Scott	Collier	-	Fall of roof.	-	1	-	-	-	-	1	1
								Total for January	-	5	2	1	-	2	10	
Feb. 4	11	West Riding	Normanton	Pope and Pearson	Saml. Memery	Ditto	25	Fall of roof	-	1	-	-	-	-	1	1
" 10	12	Grange	Rotherham	G. Chambers and Son	Reuben Pearce	Boy	12	Run over by waggons on surface	-	-	-	-	-	-	1	1
" 26	13	Harrop Edge	Bradford	Isaac Wood and Son	Wm. Priestly	Steward	37	Fall of roof. (Accident 3rd Dec. 1870).	-	1	-	-	-	-	1	1
" 27	14	Car House	Rotherham	Aldwarke Main Coal Co.	Thos. Hague	Boy	12	Explosion of gas	1	-	-	-	-	-	1	1
" 28	15	Oaks	Barnsley	Firth, Barber, and Co.	John King	Hurrier	22	Fall of coal	-	1	-	-	-	-	1	1
								Total for February	1	3	-	-	-	1	5	
Mar. 10	16	Grange	Rotherham	G. Chambers and Son	Henry Parkin	Driver	13	Fall of roof in the level	-	1	-	-	-	-	1	1
" 13	17	Holmes	Ditto	Rotherham, Masbro', and Holmes Co.	Richard Davey	Collier	27	Fall of pipes in pumping shaft	-	-	-	-	-	-	1	1
" 14	18	Rockley	Barnsley	T. A. Mann	Chas. Netherwood	Hanger-on	43	Cage lowered on him when crossing in shaft.	-	-	-	-	-	-	1	1

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of the Colliery.	Where situated.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.						
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above Ground.	Total.	
1871.															
Mar. 24	19	Rothwell Haigh	Leeds	J. and J. Charlesworth	Joseph Wood	Collier	47	Fall of roof	-	1	-	-	-	-	1
" 31	20	West Ardaley	Ditto	West Yorkshire Iron and Coal Co.	George Fisher	Bye-workman	39	Ditto	-	1	-	-	-	-	1
								Total for March	-	3	-	-	-	1	5
April 1	21	Dewsbury Moor	Dewsbury	G. and J. Haigh	Joseph Rowley	Sinker	47	Fall of walling in sinking shaft	-	-	1	-	-	-	1
" 6	22	Hoyland and Elsecar.	Barnsley	Inspectors of H. and Elsecar.	John Turner	Bye-workman	31	Fall of coal	-	1	-	-	-	-	1
" 8	23	Aldwarke Main	Rotherham	Aldwarke Main Co.	Chas. Ward	Collier	28	Ditto	-	1	-	-	-	-	1
" 10	24	Lundhill	Barnsley	Lundhill Coal Co.	George Heald	Driver	13	Crushed by corves	-	-	-	1	-	-	1
" 12	25	Wheldale	Castleford	Wheldale Coal Co.	Patrick Morrisroe	Screener	14	Crushed by waggons on surface	-	-	-	-	1	-	1
" 13	26	Woolley	Barnsley	Woolley Coal Co.	Peter Gee	Collier	24	Fall of roof	-	1	-	-	-	-	1
" 24	27	Car House	Rotherham	Aldwarke Main Co.	John Wagstaff	Ditto	24	Ditto	-	1	-	-	-	-	1
" 25	28	Oaks	Barnsley	Firth, Barber, and Co.	George Williams	Ditto	30	Ditto	-	1	-	-	-	-	1
" 25	29	Snydale	Pontefract	Rhodes and Dalby	Abm. Roberts	Driver	25	Crushed by corves	-	-	-	1	-	-	1
" 26	30	Manvers Main	Rotherham	Manvers Main Co.	Wm. Dickinson	Hurrier	15	Fall of coal	-	1	-	-	-	-	1
" 27	31	Waleswood	Sheffield	Skinner and Holford	George Bean	Collier	22	Explosion of gas	1	-	-	-	-	-	1
								Total for April	-	6	1	2	1	1	11
May 2	32	Wombwell Main	Barnsley	Wombwell Main Co.	Michael Sullivan	Hurrier	33	Crushed by corves	-	-	-	1	-	-	1
" 3	33	Nunnery	Sheffield	Duke of Norfolk	Joseph Hague	Bankman	49	Rope broke on incline hoist on surface, tub ran down and crushed him against weigh cabin.	-	-	-	-	1	1	1
" 3	34	Orgreave	Ditto	Fence Coal Co.	A. Renshaw	Collier	29	Fall of roof	-	2	-	-	-	-	2
" 3	35	Holmes	Rotherham	R. M. & Holmes Co.	W. Gee	Ditto	24	Ditto	-	1	-	-	-	-	1
" 8	36	Thorncliffe	Sheffield	Newton, Chambers, & Co.	W. Johnson	Ditto	48	Fall of coal	-	1	-	-	-	-	1
" 9	37	St. John's	Wakefield	G. Bailey	Jas. Saxtin	Ditto	27	Crushed by cage at bottom of shaft	-	-	1	-	-	-	1
					John Wood	Hanger-on	60		-	-	-	-	-	-	1

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of the Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above Ground.	Total.
1871. May 2	38	Rawmarsh	Rotherham	J. and J. Charlesworth	John Peace	Collier	69	Fall of coal	-	1	-	-	-	1
" 25	39	Bateman	Bradford	Hird, Dawson, and Hardy	W. Hodgson	Ditto	40	Fall of roof	-	1	-	-	-	1
								Total for May	-	6	1	1	1	9
June 1	40	Middleton	Leeds	Middleton Coal Co.	S. Butterfield	Hurrier	40	Crushed by a corf	-	-	-	1	-	1
" 8	41	White Horse	Ditto	Trustees of R. and W. Garside.	W. Balderson	Collier	43	Fall of roof	-	-	-	-	-	1
" 14	42	Mount Osborne	Barnsley	W. Day	W. Rhoydes	Ditto	30	Fall of coal	-	1	-	-	-	1
" 27	43	Low Elsecar	Ditto	Earl Fitzwilliam	Thos. Rodgers	Ditto	51	Ditto	-	1	-	-	-	1
" 28	44	Kirkstyles	Denby Dale	Trustees of H. Ellis	Senior Rangeley	Ditto	21	Suffocated at bottom of shaft	-	-	-	1	-	1
								Total for June	-	3	-	2	-	5
July 3	45	Stafford	Barnsley	Stafford Main Co.	Jos. Earnshaw	Ditto	31	Fall of roof	-	1	-	-	-	1
" 4	46	Killingbeck	Leeds	Trustees of R. and W. Garside.	John Stewart	Sinker	25	Part of capstan chain fell on him in shaft.	-	-	1	-	-	1
" 10	47	Mirfield Moor	Mirfield	Marriott Bros.	Hallas Thornton	Hurrier	16	Fall of roof	-	1	-	-	-	1
" 11	48	Nunnery	Sheffield	Duke of Norfolk	Joseph Pidcock	Boy	13	Fell down shaft from Park Gate seam.	-	-	1	-	-	1
" 12	49	Thorncliffe	Ditto	Newton, Chambers, & Co.	Thos. Adam	Ditto	17	Got into cage against orders, and crushed against guide-rod.	-	-	1	-	-	1
" 14	50	Liversedge Park	Dewsbury	D. Wroe and Co.	John Day	Bricklayer	39	Scaffold in sinking shaft gave way	-	-	1	-	-	1
" 5	51	Sharlston	Normanton	Sharlston Coal Co.	William Stead	Screener	27	Run over by waggons on surface	-	-	-	-	1	1
								Total for July	-	2	4	-	1	7
Aug. 3	52	Oaks	Barnsley	Firth, Barber, and Co.	Abm. Hall	Collier	30	Fall of roof	-	1	-	-	-	1
" 4	53	Aldwarke Main	Rotherham	Aldwarke Main Co.	Saml. Askew	Hurrier	21	Ditto	-	1	-	-	-	1
" 14	54	Denaby Main	Ditto	Denaby Main Co.	Richd. Dawes	Collier	33	Fall of coal	-	1	-	-	-	1

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of the Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.						
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above Ground.	Total.	
1871.															
Aug. 15	55	Kiveton Park	Sheffield	-	John Reeder	Collier	21	Fall of coal	-	1	-	-	-	1	
" 19	56	Tinsley	Rotherham	-	George Nixon	Hanger-on	21	Pedestal of corf fell on him down shaft.	-	-	1	-	-	1	
" 31	57	Kiveton Park	Sheffield	-	Henry Parkin	Boy	19	Fall of roof	-	1	-	-	-	1	
								Total for August	-	5	1	-	-	6	
Sept. 1	58	Manston	Leeds	-	Andrew Bromwich	Collier	42	Fall of coal	-	1	-	-	-	1	
" 12	59	Wheldale	Castleford	-	Thomas Smith	Ditto	37	Fall of roof	-	1	-	-	-	1	
" 20	60	Churwell	Leeds	-	Ed. Stocks	Boy	12	Run over by corves	-	-	-	1	-	1	
" 27	61	Hostingley Lane	Dewsbury	-	{ Henry Wilcock Robert Brook	Collier Ditto	42 —	Explosion of gas	2	-	-	-	-	2	
								Total for September	2	2	-	1	-	5	
Oct. 14	62	Low Stubbin	Barnsley	-	J. Sellars	Bye-workman	47	Fall of coal	-	1	-	-	-	1	
" 14	63	Featherstone Mn.	Pontefract	-	{ Geo. Reynolds Jas. Pitchforth	Collier Ditto	51 19	Explosion of gas	2	-	-	-	-	2	
" 16	64	Aldwarke Main	Rotherham	-	Fred. Wright	Assistant Hanger-on.	13	Crushed between corves and a revolving shaft.	-	-	-	1	-	1	
" 18	65	Wombwell Main	Barnsley	-	John Thompson	Hurrier	20	Crushed by corves	-	-	-	1	-	1	
" 18	66	Denaby Main	Rotherham	-	James Jackson	Collier	43	Fall of roof	-	1	-	-	-	1	
" 23	67	Mount Osborne	Barnsley	-	John Boston	Ditto	20	Crushed by corves	-	-	-	1	-	1	
" 24	68	Garforth	Leeds	-	Ed. Hemsworth	Byeworkman	66	Fall of coal	-	1	-	-	-	1	
" 26	69	Edmunds Main	Barnsley	-	Wm. Pratt	Hurrier	32	Fall of roof	-	1	-	-	-	1	
								Total for October	2	4	-	3	-	9	

List of Fatal Colliery Accidents—continued.

Date.	No. of Accidents.	Name of the Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.						
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.	
1871.															
Nov. 4	70	Savile	Dewsbury	Crawshaw and Blakeley	John Mellor	Underviewer	—	Whilst being lowered down pump- ing shaft.	—	—	1	—	—	—	1
" 9	71	Nostell	Wakefield	Chas. Winn	Wm. Stephenson	Collier	19	Explosion of gas	1	—	—	—	—	—	1
" 11	72	Willow Bank	Barnsley	Thorp's exors.	Charles Wroe	Ditto	46	Ditto	1	—	—	—	—	—	1
" 22	73	Holmes	Rotherham	R. M. and Holmes Co.	Thos. Morman	Ditto	35	Fall of coal	—	1	—	—	—	—	1
" 25	74	Tankersley	Sheffield	Newton, Chambers & Co.	{ Thos. Dickinson Wm. Shepherd	{ Ditto Ditto	{ 31 21	Explosion of gas	2	—	—	—	—	—	2
" 29	75	Monk Bretton	Barnsley	Monk Bretton Coal Co.	James Morgan	Ditto	—	Fall of coal	—	1	—	—	—	—	1
								Total for November	4	2	1	—	—	—	7
Dec. 1	76	High Stile	Ditto	High Stile Coal Co.	W. H. Blackburn	Hurrier	20	Fall of coal	—	1	—	—	—	—	1
" 2	77	Swaith Main	Ditto	Mitchell and Co.	Wm. Mawson	Hanger-on	20	Crushed by cage at bottom of shaft	—	—	1	—	—	—	1
" 9	78	Woolley	Ditto	Woolley Coal Co.	John Morgan	Bye-workman	22	Crushed by wheel at end of engine plane.	—	—	—	1	—	—	1
" 16	79	Liversedge	Leeds	Park Coal Co.	Wm. Barstow	Hurrier	14	Run over by corves	—	—	—	1	—	—	1
" 20	80	Robin Hood	Ditto	J. and J. Charlesworth	Amos Hall	Waggoner	20	Crushed by waggons on surface	—	—	—	—	1	—	1
								Total for December	—	1	1	2	1	5	
								Total for the year	10	43	13	12	7	84	
List of the Fatal Ironstone Mine Accidents, and Loss of Life arising therefrom, in the Yorkshire District during the year 1871.															
Dec. 1	1	Low Moor	Bradford	Hird, Dawson, and Hardy	Matthew Mawson	Ironstone Miner.	46	Fall of roof	—	1	—	—	—	—	—
								Total for the Year	—	1	—	—	—	—	1

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SALMON FISHERIES (ENGLAND AND WALES).

ELEVENTH ANNUAL REPORT

OF THE

INSPECTORS OF SALMON FISHERIES
(ENGLAND AND WALES).

Presented to both Houses of Parliament by Command of Her Majesty.



LONDON:
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MR. BUCKLAND'S SIXTH REPORT.

To the Right Honourable H. A. Bruce, M.P., Secretary of State for the Home Department.

SIR,

I HAVE now the honour to present to you my sixth annual Report as one of the Inspectors of Salmon Fisheries of England and Wales.

It gives me great pleasure to state that the salmon fisheries as a whole are in a very prosperous condition.

The following *twenty-two* districts report an increase in the take as compared with the previous year :—

Eden, Kent, Lune (in upper waters considerably), Ribble, Dee (greatly), Clwyd and Elwy, Seiont, Dovey, Teivy, East and West Cleddy, Towy, Usk and Ebbw, Wye (upper waters), Severn (mid districts), Fowey (by rods), Dart (considerably), Exe, Frome, Trent (upper waters), Wharfe, Tyne, and Coquet.

The following *seven* rivers report diminution :—

Conway, Avon (Brue and Parret), Avon and Erme, Axe, Avon and Stour, Derwent, Coquet (in bull trout).

The increase or diminution is doubtful in the following *five* districts :—Taw and Torridge, Camel, Tamar and Plym, Teign, and Canterbury Stour. The Otter and Tees do not make any report on this point.

It is curious to remark, having reference to future legislation, that the great majority of the rivers attribute the increase of salmon to two causes, viz., Protection and Preservation. It is therefore quite clear to my mind, not only from the above abstract of written reports, but also from the knowledge which I have gathered during my inspections throughout the country, that if it is desired further to increase the production of fish, our efforts should be more strictly directed to the *improvement of the clauses which give Boards of Conservators power to protect salmon from their natural as well as human enemies*. As to how this is to be done, see my remarks on Legislation, page 31.

I think as a whole the size of English and Welsh fish is increasing. This is certainly due to the non-destruction of the kelts. A kelt being a larger fish than a fry has greater strength to protect himself from his natural enemies, and also to obtain the food upon which he naturally feeds when in the sea. The fry being small are more liable to danger and destruction, and that by thousands. Taking the fry to average one ounce in weight, I find that it will take one hundred and ninety-two fry to equal a twelve-pounds fish. Besides protection, the increase of fish may be attributed to the diminution of pollutions and the construction of fish passes. I treat of the legislation I would wish to see applied to these cases at pages 28 and 35.

Seven rivers report a decrease in their take. As regards the remedies to be applied to the Conway, I have given full details in my report on that river. Under proper treatment the Conway will, I trust, shortly report increase, and that to a considerable extent. The Avon (Somerset) attributes diminution to weather and not local causes. By this I suppose is meant that the natural conditions are not less favourable, but local drought and weather have affected the capture of the fish.

It is quite evident what is the matter with the Plym. The china-clay works still continue to do a considerable amount of mischief (see article on pollutions).

For the present condition of the Devonshire Avon, see my report on that river, p. 3.

The cause which compels the Axe to report diminution is easily preventible; and I trust that a remedy will be shortly applied. The Hampshire Avon reports diminution, but only as compared with the take of 1870, when the increase was very remarkable; this, therefore, is only a temporary falling off. The Derwent is the worst case of all. The remedy is to make the dams on the river passable; this is simply a matter of expenditure of time and money, backed by a thorough knowledge of the art of building salmon passes.

The object of the Coquet Board of Conservators is diminution of bull trout and increase of salmon. The Coquet, therefore (although placed on the unfavourable

and "decrease" side of the report), ought rather to be a matter of congratulation than otherwise. Anyhow, the facts show the power that men have over the cause of increase or diminution of salmonidæ in a river.

Among the rivers in an apparently stationary condition are the Taw and Torridge. I have not the slightest fear for these rivers; the natural conditions are so good, and the Board so energetic, that it only requires the settling of certain questions of detail to greatly increase the produce of these two excellent rivers.

The Teign is the worst case of the lot; it is not, however, hopeless. All that is required is that the water from the mines be kept out of the river. It is not by any means impossible to do this. I have been in personal communication with some of the members of the Board of Conservators on the point, and my colleague in one of his inspections has taken the matter more directly in hand.

It will therefore be seen that the salmon fisheries of England and Wales are in a very promising condition for future prosperity, but it will not do to relax our efforts at this important juncture. The salmon have had the benefit of the protection of the Fishery Act now only ten years. If the report on the former lamentable state of our rivers by the Commissioners of 1860, upon which the present Acts are founded, be examined, the increase of fish will be found to be very astonishing.

Time and experience have shown in what way the Acts of 1861 and 1865 are deficient. We have now only to mend those deficiencies. This done, it will be impossible to predict to what point of development another ten years of amended legislation may not bring the salmon fisheries of England and Wales, to the amplification of our national wealth, the benefit of the large class of poor and industrious fishermen, the amusement of anglers, and the increase of food for the public.

My Report this year will not contain so many details as usual, as it is most desirable that the Report of my colleague and myself, and the returns from the Boards of Conservators, should be submitted to Parliament at the earliest possible period of the session.

NEW FISHERY DISTRICTS.

Whereas it is most advisable that the whole of the coast of England along which salmon are found should be put under the official protection of the Salmon Acts, I am happy to report the inclusion, during the past year, in official limits, of two considerable tracts of coast, together with the rivers adjoining. On the east coast of England, below the Humber, there are no rivers of sufficient importance to be formed into districts, though we may hope the Thames may one day become a salmon river. Passing round the North Foreland we come to the Canterbury Stour, of which I have given a Report in these pages. Along the south coast of England, between Dover on the east and Selsea Bill on the west, there are several smaller rivers which, I think, ought to be made into districts, as a certain number of migratory salmonidæ certainly ascend them every year. These rivers are the Rother, the Cuckmere, the Ouse, the Adur, and the Avon. I am happy to say that a considerable portion of this tract has now been lotted out into a new district. My colleague having taken special charge of this matter, full particulars will be found in his Report.

The new district is that of the Rother.

The following is the official description of this district :—

"So much of the rivers Rother, Tillingham, and Brede, and their tributaries, as lies within the counties of Sussex and Kent and the liberties of Rye and Winchelsea; the estuary of the said river; the space between ordinary high and low water mark (hereinafter called the sea shore) between Dungeness in the county of Kent and Fairlight in the county of Sussex; all rivers running into the sea between the said points, and being within the said counties, and the sea adjoining to the seashore between the said points for the distance of three miles seaward from ordinary low water mark."

Between Selsea Bill and Christchurch in the centre of Poole Bay, we have three rivers: the Itchen, the Test, and the Lymington river. It is most desirable that the two former, the Itchen and the Test, should be formed into a district, and this because they are naturally suited for the multiplication of salmon, both from the purity of the water which runs from a chalk country, and from the nature of the spawning beds. Even without any protection at the present time, they have produced during the past year a large number of salmon. In the beginning of June 1871, close upon three hundredweight of salmon were taken in the Southampton waters between the Marchwood Powder Mills and Calshot Castle. This number was known to be taken; probably many others were captured of which we have no intelligence.

As regards the Itchen. In October 1871, I received the following information from T. R. Sachs, Esq., Hon. Sec. of the Piscatorial Society:—"We caught a quantity of

“ ‘last spring’s’ (young salmon) in the Itchen, which, of course, we turned in again; the shallows were full of them. The river is full of salmon at spawning time; during our stay three salmon leaped out of the water, one of which looked 20 lbs.”

The fishermen in the Southampton estuary are under no control and pay no licence duty. I sincerely hope that when the question of the formation of boards is finally settled, I shall be able to persuade the country gentlemen, the Mayor and Corporation of Southampton, and the Rev. the Warden and authorities of Winchester College, and other riparian owners to form themselves into a Salmon Fishery District Board.

The part of the seacoast in the neighbourhood of the mouth of the river Rhymney which comes out at Cardiff has, principally through the influence of the Rev. A. Morgan and Mr. Berrington, Chairman of the Usk, also been formed into a district. The river itself has been for many years very much neglected, and its waters are at the present time greatly polluted. The formation of this district must of necessity prove of great advantage to the neighbouring rivers, the Usk, the Wye, and the Severn.

The following are the official limits of the Rhymney :—

“ So much of the river Rhymney and its tributaries as lies within the counties of Monmouth, Glamorgan, and Brecknock; the estuary of the said river, so much of the Bristol Channel as lies north of a line drawn midway between the coasts of Monmouthshire and Glamorganshire on the one hand, and the coast of Somersetshire on the other hand, west of a line drawn seawards from Ty-ton-y-pill, in the county of Monmouth, being the western boundary of the existing Usk and Ebbw Fishery District, and east of a line drawn seawards from the eastern extremity of the Bute Docks, Cardiff; also the coast between the said points, and all rivers flowing into the Bristol Channel between the said points, and being within the above counties.”

In my Report upon the Dovey district I have mentioned the desirability of protecting the salmon which breed in such great numbers in the two branches of the Dolbenmaen river, the Devyfawr and the Devyfach, which run out at Criccieth in Carnarvonshire. The Dovey district is already too large to include this river without inconvenience, and the Seiont district does not want it. It is, therefore, most advisable that it should be formed into a separate district by itself.

I am in communication on the subject with Lord Newborough, Mr. Humphrey, of Portmadoc, Mr. Manley, of the Seiont, and several other gentlemen. Mr. Charles Verral, of Plasgwilyn, has kindly undertaken the duties of Honorary Secretary when the district is formed.

THE AVON (DEVON).

There is a very bad weir at Aveton Giffard on the Avon in Devonshire. The weir is steep and the surface very rough. The neap tides come to the foot of the weir, the spring tides sometimes cover it, ordinary tides come two feet up the lower slope. There can be no doubt that this weir keeps down those fish that want to come up, and keeps up those that want to come down. There are some old sluice gates on one side of the weir which in my opinion might be easily made available for a salmon pass by dividing out the space between the gates and the river below into a series of pools. The space is 16 feet long. Close to these sluice gates there is a salmon pass which has several faults; 1st, it is much too steep; 2nd, it is much too narrow; 3rd, the toe of it projects too far away from the foot of the weir. It is possible to improve this ladder, though it will never be a good one. This may be done by converting the stops into pools by means of boards placed across the present stops. The lower third of the ladder should be taken away altogether and built up afresh by the side of the ladder on the Ballysodare plan. The foot of it would then come near the pool in which the fish naturally congregate. It might also be possible to place a diagonal board on the other side of the weir,* fixing it by means of props steadied by the natural bank. The ladder at Aveton Giffard Mills, which are supplied by this weir, is very small, but it seems to be very effective.

There can be no doubt that the Avon is a very late river, and the proprietors naturally ask why they are not allowed to catch the fish when they come up at the end of the year in good condition (as they say), while they are allowed to catch the fish by netting in the river in the spring months, at which time there are nothing but kelts in the river. In fact, I have good reason for believing that a great many of the unclean fish which were seized in February 1871 were caught in the Avon. A considerable number of dead fish are often found in the Avon in the spring of the year, no less than 50 kelts having been found dead in the spring of last year.

* Since my visit to this weir the Special Commissioners have pronounced that the owner has the legal right to fish it. Before he can do so of course an efficient pass will have to be fixed and approved according to the provisions of the present Acts.

I am sorry to say that there is considerable discord on the Avon between the Conservators and the owners of the land by the side of the river relative to traversing the banks of the river, and at a meeting of the Board the following resolution was passed :—
 “ That the Conservators do invite the landowners to meet them to consider the future management of the fisheries of the Avon, with a view to mutual co-operation for the increase of fish in the district, and the general good of the public.”

The Avon and Erme Board of Conservators are anxious that an amendment in the law should be made relative to licenses for nets. They consider that a man who has a right to net should be obliged to have a license for a net, if a net is used on his property, for, as matters now stand, owners of fisheries on the Avon do not take out a license, but get some person who has a license to come and draw their pools, making arrangements as to the division of the fish. Thus a holder of one net license gets leave to use his net in half a dozen places. They think also that licenses should not be transferable; they are also of opinion that water-bailiffs and Conservators should have the power of walking on the banks and on lands adjoining the river, without the consent of the landowner, as no other means will effectually prevent the capture of unclean fish; they also think that no nets should be drawn above the tideway, as thereby large numbers of kelts are destroyed in the spring, and sometimes in the act of spawning or guarding their nests. I hear that in the month of January salmon were sold in the neighbourhood at 3*d.* per lb.

THE AVON AND STOUR (HANTS).

Although I have not had an opportunity of visiting these rivers since I last reported on them, I have obtained from Mr. Charles Love, the water-bailiff of the Avon and Stour district, the following returns of fish caught :—

River Avon :—Winkton 38, Topley 18, Avon Tyrrell 25, Bisterne 23, Somerley 2, Bickton, near Fordingbridge, 1; total 107.

River Stour :—Throop 18, Royal Draught 6; total 24.

In the “ Run ” 567.

“ Royalty ” fishery, say, 1,102. General total 1,800.

Mr. Love says, “ As usual I cannot get the figures from the Royalty fishery, but estimate that the number is about double the quantity of fish taken at the ‘ run.’ If ‘ the racks ’ which obstruct the fish, and the drains in the water meadows which injure the kelts and smolts, could be regulated, the Avon and Stour would be much benefited.”

THE CLWYD AND ELWY.

Captain Thomas, of Bryn Elwy, St. Asaph, who has known these rivers all his life, and who is at present one of the Conservators, informs me that, forty years ago, when there were no boards of Conservators, no protection, and but few fishermen, there were, in his opinion, more salmon and trout in the Clwyd and Elwy than at the present time; but forty years ago the water in the rivers was nearly always high, there was but little drainage, and but a very scanty population; now, on the contrary, the land is very much drained, the population is greatly increased, and fishermen, both with the net and rod, have multiplied amazingly.

For the last three years the Clwyd and Elwy have suffered very greatly from drought, and there has been but little winter rain to fill up the natural springs; the natural consequence is that the fish are affected by the changes brought about by the hand of man. They cannot ascend the river when there is no water, and the close season therefore requires alteration. At a meeting of the board, after considerable discussion, it was agreed that the fishing in Clwyd and Elwy ought to be prolonged into September, and that one month or six weeks in February and March should be exchanged for 15 or 20 days in September. This is the feeling of the county, and I think it is only a just request.

The Clwyd net fishing is carried on at the junction of the river with the sea at a place called “ the Foryd,” derived from two Welsh words—*mlor*, the sea, and *rhyd*, the ford, i.e., the ford of the sea, or “ the foryd.” Last year I was informed by Mr. Wright, the Honorary Secretary of the Board of Conservators, that nine nets were worked at and about this locality, each paying a license of 2*l.*

Should the fishermen be allowed to prolong their netting operations into September, the Board propose to raise the licenses, to which, I imagine, the fishermen would have no objection. The raising of the licenses would enable the Board to put on more watchers, and thereby increase the amount of fish hatched in the upper waters. This brings me to more minute details as regards the rivers. There are, I am happy to

say, no pollutions, either from mines or manufactories; we have therefore the elements of success in the natural purity of the water, even if the supply be scanty.

The obstructions are not particularly formidable, and I now proceed to report upon them.

In my Report of 1868, I gave details as to Wigfair weir belonging to H. R. Hughes, Esq., of Kinnel. This gentleman has, since that Report, placed, at his own expense, an admirable pass, about 20 feet long, in his weir; it consists of a series of pools some seven feet wide let into the body of the weir, with a notch cut into the baulk at the head of the weir so as to take all superfluous water, which would otherwise be wasted in dribbles over the whole extent of the weir. At my visit the water was nine inches below the crest of the weir, yet the pass was quite full. The water is also cleverly diverted at the foot of the pass, so as to attract the ascending fish, who are said naturally to take the other side of the weir, at which point it was impossible to build a pass. I am well satisfied with the present pass; it has, however, two faults: the jump from pool to pool—13 inches—is a little too much for gravid hens; and rubbish is apt to accumulate at the head of the pass. The remedies are obvious; notch out the stops between the pools, and put chains from the weir to the land, above the entrance to the pass, so as to stop the trees, boughs, leaves, &c., coming down the river.

The weir above this, at Pontyrallgoch, sends a very long and narrow leat down to a mill, which, from the look of it, cannot be of very considerable value. Just above the wheel of this mill is a bye-wash, a most dangerous place for smolts; a grating, therefore, is sadly required above the two hatches which command the head of this mill-race. I have marked out the place where this grating should be placed in a diagonal position, viz., one end of it should be placed at a point 30 feet from the hatches; its length would be 21 feet from the crest of the weir to the bank; the depth about three feet. A stone should be left out of the crest of the weir at the lower end of the grating, to afford a downward passage for the smolts. The grating should be of very fine meshed galvanized wire.*

Above this mill there are four others, but they do not present any formidable obstruction.

The weir at Llanfair does not appear to have been altered since I examined and reported upon it in 1868. The weir is of a barrel shape, and there is a long and wide wooden trough affixed to it. Several of the boards forming the bottom of this trough were broken away, leaving large gaps through which the water would be wasted.† I recommended these at once to be restored. At one end of the weir are two sluice gates of wood; they are very old and rotten, and the up stream side is completely filled up with gravel, confessedly put there to turn the water on to the side of the weir where the leat is. I was informed by Mr. Edward Jones, of Llanfair Talhaiarn, that the fastening down of these flood gates does his property much injury. He owns a farm of 16 acres above the weir. There is an agreement in the lease that the owner of the weir should, when floods occur, open these sluice gates. For the last two years these gates have not been opened in flood time, and Mr. Jones' farm has, in consequence, been much injured by saturation. If the gates were opened the land above would not be injured, while the salmon would be greatly facilitated in their ascent.

There are two other ways to pass the fish over Llanfair weir; 1st, by making a passage for them on the south side on the actual face of the weir, utilizing a corner, and the natural position of certain big stones which might be brought into use to form pools; 2nd, by moving the miller's hatch to the leat, a few yards; thus the present bye-wash might, at a very small cost, be converted into a simple but efficient pass. There is no weir that I have seen lately which is more easy to cure than this weir; it simply requires a little personal attention, ingenuity, and not much money spent upon it. If it were opened up, some eight miles of magnificent spawning ground would be opened, and the fish would, I am assured, be watched by the servants of Mr. Wynne, of Garthwin.‡

I feel certain that vast numbers of young salmon are destroyed annually in the Elwy by the mills, at none of which is a grating ever affixed in the spring months; I therefore entreated the Board to cause gratings to be affixed to the entrances of the mill leats at the time the smolts are going down. I have every reason to think that the Board will carry out my wishes. I explained that the gratings are only necessary at the time

* March 6th. I have received a report that "the grating is now being put up."

† Parry, the water-bailiff, has now mended this.

‡ Captain Wright, the secretary, reports, 5th March 1872, "The old flour-mill at this weir being unoccupied, the old flood-gates are pulled down, and the water has a clear passage through; this is infinitely the best arrangement that could be made." The water-bailiff also reports, "A great many fish have gone above Llanfair, and the same up the Aled River, more than I have ever seen before." This is most satisfactory.

the smolts and kelts are going to the sea, and that, if properly placed, they will not in the least interfere with the mill power. Immense numbers of salmon fry are bred every year in the Elwy, in which river I am sorry to say that poaching goes on to a considerable extent. The method of catching the fish is this: the poacher ties a long string on to a large hook; he then cuts a stick from the hedge, and fastens the hook to the end of the stick by winding the string round it; he then gaffs the salmon, who, when struck, runs the line off the end of the stick, which drops into the water, while the man holds the string, and lands the fish. This is a deadly device, and very much the same in principle as that employed by the Esquimaux for killing seals.

This instrument is much used to catch the salmon among the roots of the trees below Llanfair weir; hence, the great necessity of making this weir passable. Another form of poaching on the Elwy is the practice of setting night lines for trout; these kill all the best fish by most unfair means. A poacher, one "old Jack," was lately caught by the keeper of Captain Conway Rowley Conway; he had on him a large number of night lines and forty odd fish.

THE CONWAY.

The Conway is a river that will amply repay scientific cultivation; it is one of the most peculiar rivers in England. Having examined it with special care, I have come to the conclusion that it flows down as it were a series of gigantic steps. This is owing to the peculiar geological formation of the country, which is laid out in plateaux. The consequence of this is that there are several very large deep pools filled with "black" water of the purest kind. The names of these pools are as follows:—1. Beaver Pool; 2. Llynglas; 3. Rock Pool; 4. Wall Pool; 5. Black Pool; 6. Greianllyn; 7. Williams Pool; 8. Pontypant; 9. Pont-Pertheos. The Beaver Pool is especially a great harbour for fish as they ascend the river; it is said to be nearly 12 yards deep, and there are nearly always salmon in it. A short distance above the Beaver Pool the river divides into the Conway proper, and the Lledr. I regret to say that nearly all the spawning ground in the Conway proper is entirely blocked out by the celebrated Conway Falls. The ladder placed there some years ago is of course perfectly useless. I have again examined the falls, and find that there is a road round them upon the east side which might possibly be made available for the passage of salmon. There is no difficulty getting the fish three parts of the way up at least by means of the natural deep pools which exist there; the remaining third of the pass, however, requires great attention, as it is divided into a series of what are, to salmon at least, small precipices, of from 2 to 5 feet in height. By a judicious utilization of the lower parts of these small precipices, and by blocking below, I think a way may be made for the fish.

As I have stated in my Report on the Scotch Salmon Fisheries, I never should advise attempting to get fish up falls at the points where the main rush of water comes, as the violence of the stream is certain to be too strong for them. There is a bad jump for the fish at the very bottom of the Conway Falls. This, as I pointed out on the spot, may easily be obviated by forming a secondary weir with the loose stones now lying idle in the bed of the river.

I am, however, afraid that, after all, the Conway Falls will ever remain a permanent barrier, and that it would be more judicious to turn attention to the further development of the Lledr.

A remarkable circumstance was told me by Mr. Heneage Wynn Finch relative to these falls. Some years ago he placed some spawning salmon above the falls; they bred in the river, and he has frequently caught parr, the produce of the nests made by these fish. These are very large parr, and they must have stayed above the Conway Falls six or seven years without going to the sea. This is very difficult to be explained. Mr. Finch is of opinion that the young fish on coming to the falls are afraid of allowing themselves to be carried over this tremendous precipice, and I think this may very likely be the case; if so, it will be no use opening the falls. I understood, moreover, from the water-bailiff, that fish naturally will rather take the Lledr than the Conway, and that they never will look at it till the water clears, the reason of the discolouration of the water being bog land which is called the Kerneogie bog. There are not above two or three miles of spawning ground above the falls. At the junction of the Conway and Lledr there is a fine pool, the Tyn-e-lae Pool.

On proceeding up the Lledr the first pool we come to is Tanyralt or Llynglas Pool. There is a trap here which is legal. This is fished by Mr. John Jones, of Tanyralt; and, I believe, fished fairly. The next is Blackpool, where there is also a trap, relative to which a law-suit lately took place, resulting in a verdict for the Gwydr estate. There

is good angling in this pool. The next is Greianllyn Pool, or Little Foes Noddyn. The water rushes out of this pool through a very narrow gorge in the rock, and then falls over a ledge between three and four feet high. This is a very difficult place for salmon to get over; if there is too little water, the jump is too high for the fish; if there is too much, they are beaten back by the violence of the water. This place is a favourite resort for poachers, who click the fish as they are jumping at the fall.

It fortunately happens that there is a depression in the land to the right of this fall; in fact it is the old course of the river. This might at a small expense be made available for the passage of the fish round the falls.

The next most important obstruction is Pontypant Bridge, where the rocks are formed in large slabs like gigantic tables, laid one over the other. A very slight expenditure of gunpowder would make these falls passable and rescue the fish from the poachers, who gaff them at and near this spot.

Immediately above Pontypant Bridge, the Lledr alters entirely in character; instead of rushing over rocky mountain gorges with white foam, it ripples gently over some of the best spawning ground I ever saw in my life. This stream is about $2\frac{1}{2}$ miles long, and runs through what is called the Dolwyddelan. It is in these Dolwyddelan meadows that I believe most of the Conway salmon are spawned. I regret, however, to report that they are subject to very great dangers in this admirable spawning ground; for the slate quarrymen are in the habit of coming over in gangs of from 40 to 60, with blackened faces, and killing every salmon they can get hold of. They defy the water-bailiffs and all the proper authorities by their numbers and force. On the 29th January I received the following letter:—

“Thirty-five poachers from the Festiniog quarries lately made a raid up the salmon beds. We secured only one of them; he had seven fish in his possession; he got three months’ hard labour and a fine of 5*l.* for each fish, or another three months. The rest of the poachers got away without trouble, and it is said they had a ton of fish with them. One or two, more frightened than the rest, dropped a bag containing 19 fish. They threatened to come again 300 strong. I have applied to the chief of police. I should like to know who would face 300 men.”

Above Dolwyddelan meadows the river assumes a very rocky character, its bed being composed of large boulder stones and no gravel, and if we were to follow up the stream we should arrive at a lake situated in boggy land and without any spawning tributaries at all, the water in this neighbourhood being grown up with rushes and reeds. Mr. Beach, the agent of the Gwydr estate, is therefore anxious that the fish should be blocked at a convenient point above the Dolwyddelan meadows.

After careful examination of the locality, I fixed upon a spot near Pertheos Bridge, which was, in my opinion, the best suited for the erection of this grating; the grating I propose will not be, as gratings generally are, placed vertically across the stream, but a grating of iron bars similar to those used in London to put over areas of houses.

I propose that this grating should simply be laid down quite flat resting upon two ledges of rocks at a waterfall where the fish are in the habit of jumping. The water would fall through the bars of the grating, by which the fish would be prevented of course from jumping at the fall, while at the same time the poachers could not click the fish without great difficulty. The fish would then have to fall back to the excellent spawning ground I have described above, at the Dolwyddelan meadows.

Should they be allowed to go past the spot where it is proposed to put up this grating, they would arrive in a wild country quite unprotected, and would almost to a certainty fall a prey to the slate quarrymen; whereas if concentrated they have a better chance for their lives.

The River Conway requires, in order to breed more fish than it does already, that a regular system of cultivation should be put in hand. This will best be done by clearing out portions of the river so as to entice salmon to spawn there. In former times the poachers had a regular system of making artificial spawning beds, and when the salmon came to them they speared them. Now the fish has to find and make its own spawning bed. I therefore strongly recommend that the system of artificial spawning beds should be put in force. I have made a spawning bed in one of the brooks to show the water-bailiff how it should be done.

When spawning beds were made by the poachers they used to spear the cock fish, leaving the hen to find another mate, which she generally did, only to be speared like his predecessor. There is no doubt that at the present time there are too many cocks in the river; they fight terribly and hinder the spawning operations. Towards the end of December I received the following information:—

“From fights which we sometimes see in the pools, we have no doubt too many cock fish were on the spawning beds. The keepers witnessed a fight yesterday, and they

" describe it as being most savage. They (the fish) charged at and shook each other like dogs. They were both large fish, over 30lb each, one red, the other bright."

Many of these large cocks die from fighting and exhaustion in the spring months; casts of specimens can be seen in my museum. Those who were once poachers and who speared these cocks on the spawning beds are of opinion that there were formerly more salmon in the river than now, "because they killed the cocks," and I think this theory may be very probably correct.

I am strongly of opinion that the *angling* season for the Conway should be prolonged into the month of November. It is a positive fact that the heavy fish keep out of the river well away in the estuary till quite the back end of the year, and that the largest of them come up in November. The anglers, if allowed to fish the river in November, would most willingly agree, 1st, to turn back all unclean fish (most of the fish are then in very fair condition); 2nd, to use no gaff, only a landing net; 3rd, to put back all female fish. To which I may add the advice to keep all the cocks for the reasons given just above.

I feel certain if attention and care is given to the Conway its produce of salmon is capable of vast increase, and I am in communication with the local authorities and land-owners on this important point, to which I shall pay every attention.

THE COQUET.

The attempts to restore salmon to the Coquet still continue. In the year 1868 permission was given by the Secretary of State to extend the open time so as to kill off the bull trout. The destruction has been going on ever since that date. At my visit of enquiry to consider whether it was advisable to continue the experiment any further, the Conservators were good enough to place in my hands the returns of bull trout destroyed. They are as follows :—

1868.	April to August	-	-	1,757	
"	1st September to 31st December			26,350	
					28,107
1869.	April to August	-	-	1,747	
"	September to December			15,464	
					17,211
1870.	April to August	-	-	770	
"	September to December			10,687	
					11,457

It will thus appear that during the three years no less than 56,775 bull trout have been slain. I have since received the returns of 1871 from Mr. Dunbar, which are as follows :—

1871.	11th February to 31st August	-	4,434 trout.	
"	1st September to 31st December	-	9,188	"
	So that if we add the capture of 1871, viz.	-	13,622	"
	to that of the three preceding years	-	56,775	"
	We shall find the total amount of bull trout			
	which have been destroyed to be no less		70,397	"
	than	-		

In order to show the wonderful preponderance of bull trout over salmon, amounting almost to the extermination of the latter, I now subjoin a most interesting table.

WEIGHT OF BULL TROUT AND NUMBER OF SALMON AND GRILSE TAKEN IN THE COQUET IN THE YEARS 1868, 1869, AND 1870.

Take during the ordinary open season.					Take during the extended season.				
Month.	Lbs. Weight of Trout.	Numbers.			Month.	Lbs. Weight of Trout.	Numbers.		
		Trout.	Salmon.	Grilse.			Trout.	Salmon.	Grilse.
1868.	Lbs.				1868.	Lbs.			
April - - -	112	—	—	—	September - -	19,763	—	—	—
May - - -	730	—	—	—	October - - -	28,870	—	4	19
June - - -	2,983	—	—	—	November - - -	39,987	—	6	6
July - - -	3,130	—	—	—	December - - -	16,783	—	3	3
August - - -	1,830	—	—	—					
Average weight, } 5lbs. each - }	8,785	1,757	—	—	Average weight, } 4lbs. each - }	105,403	26,350	13	28
1869.					1869.				
April - - -	108	—	3	—	September - -	9,965	—	2	3
May - - -	716	—	2	—	October - - -	19,771	—	—	3
June - - -	3,078	—	1	—	November - - -	25,628	—	2	4
July - - -	3,070	—	—	—	December - - -	6,492	—	—	1
August - - -	1,766	—	2	1					
Average weight, } 5lbs. each - }	8,738	1,747	8	1	Average weight, } 4lbs. each - }	61,856	15,464	4	11
1870.					1870.				
April - - -	41	—	—	—	September - -	567	—	1	—
May - - -	331½	—	2	—	October - - -	16,905	—	2	1
June - - -	919½	—	3	—	November - - -	12,498	—	9	—
July - - -	1,171½	—	1	1	December - - -	12,778	—	3	1
August - - -	1,386½	—	—	—					
Average weight, } 5lbs. each - }	3,850	770	6	1	Average weight, } 4lbs. each - }	42,748	10,687	15	2

Since the above has been in type Mr. Dunbar informs me that the weight of bull trout caught between February and August 1871 was 17,737 lbs.; only two salmon were caught. From 1st September to December 31st, 1871, the weight of bull trout destroyed was 45,943 lbs., besides which there were 13 salmon, and 13 grilse.

The above table, therefore, shows that the total weight of bull trout killed in the Coquet in four years is no less than 295,060 lbs., or over 131 tons.

The above returns also show that only 59 salmon and 55 grilse, total 114 specimens of salmo salar, have been killed during the last four years, as opposed to 71,808 bull trout. The task, therefore, of restoring salmon seems almost herculean, and the success is very dubious. The plan that has been adopted of restoring salmon to the Coquet has been that of artificial breeding. I made particular enquiries as to the number of salmon eggs laid down for this purpose, and by the kindness of Mr. Widdrington of Newton Hall, Felton, I am enabled to give the following report :—

“ COQUET CONSERVANCY.

“ Report of Salmon Breeding Operations carried on on the River Coquet.

“ The conservators began their operations in—

- 1865. When 60,000 ova were brought from the Tyne and Reed, and deposited in boxes at Acklington; between 5,000 and 6,000 fish were produced. In February of the following year a quantity of copperas was maliciously put into the boxes, and many of the ova were destroyed.
- 1866. 80,000 ova from Tyne and Tweed; 15,000 supposed to have been hatched.
- 1867. 10,000 ova put down at Acklington and in Biddlestone Burn.
- 1868. 36,000 ova deposited at Acklington. (Great difficulty was experienced in getting ova this year owing to the flooded state of the rivers at spawning time.)
- 1869–70. The Acklington breeding place was abandoned this year, and ponds were constructed at Rothbury (at a place called Reivers Well), and 100,000 ova were obtained from Thurso, but in consequence of their having been sent by railway, and not with a person in charge, only 25,000 were hatched. 8,000 ova were fetched by hand from the Tweed and nearly all produced fish.
- 1870–71. 70,000 ova were brought from Thurso, and only 450 fish were produced. 35,000 were brought from the Tyne, and about 32,000 fish were produced. About 8,000 fish have been turned out, and there are still remaining in lower pond about 16,000 fish, and in upper pond about 32,000.

	£	s.	d.
"The cost of the breeding ponds at Rothbury (Reivers Well) has been	-	390	0 0
Attendants' house, hatching shed, &c.	-	190	0 0
		<hr/>	
		£580	0 0"

I confess this Report is hardly satisfactory, inasmuch as the number of young salmon put into the river is small compared with the number of bull trout that are still remaining there. Having argued this matter out in detail with the Conservators, and told them my opinion very candidly, they agreed that if the open time was extended as they wished, they would on their part undertake "to lay down as many ova as their boxes at Rothbury would hold, and to use their utmost endeavours during the next three years to increase the salmon in the river, at the same time that they are endeavouring to destroy the bull trout, and they will turn out into the river a portion, say one-half, of the fish when hatched, and keep the other half in the rearing pond, or adopt any other system of propagating salmon that may be directed by my colleague and myself." The committee are of opinion that if the salmon experiment should ultimately fail, in three years the Coquet will again be swarming with bull trout.

It is the opinion of some who have great local knowledge that the Coquet is not suited for salmon because its bed is nearly all on the level, there being no deep pools alternately with shallows which salmon like so well. If this be so, it adds to the difficulties, and perhaps, after all, it would be better to give up the river to the bull trout, which do so well in it, though they are very inferior fish to the salmon proper.

THE DEE.

I am sorry to have to report that netting in the estuary in the Dee *after the close season has commenced* is still as rife as ever; matters, indeed, have gone so far, that the netters below Chester have openly given out *that September and October are their best fishing months.*

They have gone even further than this, for they state "*that if one salmon were to spawn in the Dee this would be sufficient* to keep up the stock of fish for them to catch in future years.

All kinds of artifices are used by the men to avoid detection when fishing in September and October; men are put on the look-out to give a signal when the water-bailiffs are coming. In summer only two men work each boat; in winter four are employed, two to work the boat, two to keep a look-out; and the men disguise themselves when fishing. Again, when the water-bailiffs are coming, a signal is given, and all the fish caught by unlicensed boats are put into those which are licensed.

Some time since, by orders of the Custom House, all the salmon boats were numbered in plain letters, and then comparatively no poaching took place. The fishermen, however, soon found out that the Act which ordained that boats should be numbered, applied only to sea-fishing boats. They then erased all the numbers from their boats. What, therefore, is urgently required is that for the future all the salmon boats, in the Dee especially, and in other rivers as well, should be numbered, and that the owner of the boat should be answerable for any breach of the law by persons in his boat. The Conservators also require power to stop boats to be searched, the same as the coast-guard have; they think that all boats should be locked up, as in Ireland, in close time. They desire also that the use of all nets should be prohibited in close times, except under due regulations, because the moment the salmon fishing is over, men go out with trammel nets, and say they are fishing for flukes, *i.e.*, flounders. When asked for their licenses they answer impertinently to the following effect: "Salmon fishing is over; you cannot ask for a salmon license now; we are fishing for flukes." In fact, when the salmon close season has begun, there is practically no protection at all. Having had many serious consultations with members of the Dee Board, it is my duty to state that it is their firm opinion nothing will save the Dee *but an increased weekly close time*, because the upper proprietors are now so disgusted with their present allowance of fish that they are determined to help no more in the preservation of salmon unless this is granted.

I have endeavoured to keep the Board going, but the feeling against the unfair division of the fish bred in the river is so strong, that unless more weekly close time is given, the Dee will be no longer preserved, and this is really the fact. Considering the enormous capabilities of this valuable river, the request of the Dee Board demands the most serious consideration and interference of Parliament.

The Chester weir still remains without a pass. To my mind, the simplest and best solution of this problem is for the Conservators and upper proprietors to buy up the trap itself, and use it as a pass, and this would probably be done if the weekly close time were increased.

As regards the new weir at Bala lake, see my report on salmon ladders, page 23.

THE DOVEY.

The Dovey is naturally one of the most promising salmon rivers in Wales, but, unfortunately, the fishery interests are very much impeded by the dirty water which comes out of the lead mines. The lead mines are situated on the south side of the river; the branch of it, on the contrary, which runs from the north side is fortunately not polluted, as it runs among the slate rocks. It is in this branch of the river, therefore, that most of the Dovey fish are bred. I hear from local authorities that the Dovey of late has been a better colour than former years; the reason is, that some of the mines have ceased to work. Still, however, fish and especially the smolts in the spring months are killed every year in considerable quantities by the lead pollutions. The pools in the river are also becoming filled up by the rubbish from the mines. The Dovey runs quite clean on a Sunday, when the mines are not at work, and the water comes down clear on Monday morning, so that fair angling can be obtained till the lead water comes down the river. The Dyliffy mines are the great offenders in this matter. The river which runs from these works down into the Dovey, when I saw it, looked like a river of milk, and there is not a living thing in it.

I understand that Sir Watkin Wynn, Bart., offered the proprietors of the Dyliffy mines a large piece of bog land for the purpose of filtering the water from the washings, but the offer was refused because it would entail a little expense. I trust the proprietors will reconsider their decision, and adopt this or some other means of purifying the water. See article on lead ore pollution.

The Dovey, undoubtedly, is a very late river. In the old club days the river was never opened till the 1st of May, and closed on the last day of November. The general opinion of the Board is, that six weeks should be taken from the beginning of the fishing season, in exchange for the month of November at the end of the season—the extension into November to apply to rods, of course, not to nets. If the anglers were allowed to fish in November it would be a great encouragement to the upper proprietors and riparian owners. No gaffs should be allowed, and the female fish should be returned to the water. I do not think this concession would do the least harm to the river. In fact, at the cost of a few fish, a feeling of conciliation would probably take the place of a feeling of irritation and annoyance. Six weeks being taken off from the beginning of the season the lives of many kelts would be saved, so that in time the average weight of the fish in the river would be considerably increased. Could the lead ore pollutions be kept out of the Dovey (than which there is naturally no purer water in the world), and the close season properly adjusted for the requirements of the river, more fish would be bred in it, anglers would obtain more sport, while the property in the neighbourhood would be greatly benefited.

Within the Dovey district are other rivers upon which I shall now proceed to report.

DYSYNNI.

Not far from the estuary of the Dovey, and to its north side, a little river called the Dysynni joins the sea; this river has excellent spawning ground, and is not obstructed by any weirs or other fixed engines for the taking of fish, and only three, and at most four, nets are used in it, and these only at times. There is, however, a great peculiarity at the mouth of this little river. It runs out into the sea in quite a shallow, narrow stream, not above twenty yards wide. The ordinary neap tides do not enter the river at all, and fish collect in large numbers at the mouth of the river waiting to get into it. Of late years it has been the habit of fishermen from a distance to come and net off the mouth of the river, sweeping the whole tideway with their nets, and very large quantities of fish are taken in this way. When the sea is rough it is impossible to work the nets at the mouth of the river, and then the riparian proprietors above invariably find that a larger number of fish ascend to the upper waters. This is a matter which requires alteration. The way to remedy it would be to give a resting place to the fish, and to mark out certain prescribed limits near the mouth of the river, within which it should be illegal to fish for salmon. This should be done by a byelaw passed by the Board of Conservators, with the approval of the Home Office. In the case of a large, wide river, netting at the mouth may be of comparatively slight consequence, but where

the mouth is confined to as narrow a space as that of the Dysynni a regular course of netting, which virtually commands the whole mouth of the river, is most injurious. It has the same effect as drawing a pool close below a weir. Should a clause be passed in the new Act to give a "resting place" to fish, the Dysynni should be one of the first rivers to take advantage of this new and salutary provision.

MAWDDACH AND UNION.

The two rivers which unite a short distance above the town of Dolgelley, in the Dovey district, are the Mawddach and Union. They empty themselves into a very large estuary which communicates with the sea near the town of Barmouth. The interests of these rivers are well watched by Colonel Romer, of Bryncemlin, and Mr. Williams, of Dobythel-y-nen, while Mr. Pugh, the Secretary to the Board, lives in Dolgelley. I learn from these gentlemen that the fisheries are in a satisfactory state, and Col. Romer has kindly given me the following interesting information as to the present state and future prospects of the river :—

"The figures you took down represent the quantity of fish taken by our Association net in 1869–70 and 1871. The correct figures are as follows :—

	lbs.
1869 - - - - -	1,411
1870 - - - - -	695
1871 - - - - -	638

"The net is only used in three pools in the tidal water below the bridge, and is only drawn three days in the week during the months of May, June, July, and August. Very few fish are ever taken in the month of May. In /69, none, in /70, none, in /71, 11, but all small, from 3 to 4lbs. in weight, in fact sewin. I attribute the decrease in the quantity of fish taken last season (/71) to the heavy floods we had during July and early part of August, which prevented the drawing of the net. The 648 lbs. of fish were the product of only 26 days drawing of the net. The rod fishing last season was better than usual, from the quantity of water during July, but very few fish, not more, I should say, than about a dozen, were taken above 4lbs. in weight. The fact is, I am confident, the run of heavy fish, salmon, does not commence until after the present close time, viz., 31st of October; and this is proved by the great number of large kelts we find in the river when we open fishing on the 1st of March,—wherefore the desire of the Conservators to have the power to make a byelaw to extend the season for rod fishing to the 30th of November. You will observe we do not open the river until the 1st of March, and if we could get the month of November we should be willing not to open until the 1st of April.

"R. W. ROMER."

I am sorry to say that the Glasdyr Mining Company at Llanfacreth are doing much injury to fish in the river. At my visit the water coming out from the brook connected with these mines was the colour of milk, and its effects could be traced for several yards down the side of the river. The cattle, I hear, are injured by it. The catch-pits at these works are much too small, and I understand that when the river is low the water sometimes is the colour of pea-soup; there are two other mines in the river, but they do not do much harm as they are not in full work.* The system of making artificial spawning beds by the water-bailiff has been adopted with success, but poaching is still prevalent in the neighbourhood. The poachers keep their spears in the water, and when required for use, cut a stick out of the hedge and put white stones in the river, so that they can see the fish and strike them readily; they also mark them in the daytime and spear them at night. A system of giving signals by whistles and by torches as decoys is also in vogue; for all this a large number of salmon fry go down into the estuary every year. It is the opinion of those who ought to know that the number of fish caught out of the river is just about the same now as before the Acts came into operation. I conclude, therefore, that the clauses relative to protection or preservation have not been sufficiently carried out. There are also many bass in the estuary which must be very destructive.

The Dolgelley river is a very late river; this depends very much upon the temperature and the large estuary. The temperature of the river above the town at the time of my visit was 52°, the air 52°; the fish, therefore, naturally stay in the estuary till the floods come down and attract them up by the force of the current and the lowering of the temperature. The angling interests on these rivers demand that the concessions, as indicated by Col. Romer, should be made.

THE GLASLYN.

The next important river on the coast of Merionethshire is the Glaslyn or Bethgelert river, which joins the sea at Portmadoc. The entrance to the river is commanded by

* Col. Romer informs me that Mr. Roberts, the manager, has called at Mr. Pugh's office, and has taken away with him the model I sent down to show how, at a small expense, the mine water could be cleansed before it reaches the river. It is therefore to be hoped that Mr. Roberts intends to make the necessary catch-pits on the alternate system.

lock gates connected with the reclaiming of land, but they do not, I think, do much practical harm to the ascent and descent of the fish. The sport with the rod in lakes Gwynant and Dynas has been very good during the past year, but I hear the otter is used for trout much too frequently; the Conservators are, therefore, anxious that the provisions of the 64th section of the Act of 1865, which treats of the partial application of the Salmon Acts to trout, should be made to forbid the use of the otter. Both fishermen and strangers agree that the Glaslyn rod-fishing has never been better than the last two years. The nets have also done very well; there were three net licences this year and one last. There are no pollutions in the river, and only one weir, which requires but very slight alteration to make it passable at all times. The water-bailiff, Mr. Legg, is very active in looking after poachers, and especially for men who grope for fish among big stones. I am sorry to say that there are a great many natural enemies to the smolts in the form of immense shoals of bass; these ravenous fish wait at the lock gates, go through them when they are opened, and come back with the return tide; there can be no doubt they do an immense amount of mischief to the smolts, as it is difficult, if not impossible, to catch these fish with a net. I have suggested that they should be blown up with gunpowder, and I have acquainted Mr. Homfray, of Portmadoc, who takes most praiseworthy interest in the river, and the Board of Conservators with the best manner of doing this. I trust the experiment will be made.

THE DOLBENMAEN OR DEFFAWR.

My attention has been called by the Board of Conservators assembled at Portmadoc, and also by the Seiont Board, to the great advisability of putting the Dolbenmaen river under the protection of the Salmon Act. The river itself contains water of the utmost purity, and magnificent spawning beds, almost, if not quite, the best in North Wales; it is now just outside the Dovey district, and as far as I can understand is totally unprotected. It runs into the sea (without having an estuary) near Criccieth. The salmon do not come up it till October and November; but there are deep holes in which they could conceal themselves; the sewin, however, come up earlier in the year. I have the best authority to say this is the worst poached river in the United Kingdom. The farmers, the quarrymen, and the whole country round spear the salmon whenever they can. In the summer time the pools are regularly limed, and sometimes even the water is diverted for the purpose of getting the fish.

Worst of all, there is a regular habit in the spring of the year of making little weirs with gorse bushes. Connected with these weirs, baskets are placed in the river, through which the water runs without interruption. *The descending smolts are diverted by these weirs into the baskets, and are slain by thousands.* A gentleman who knows the country well told me he himself had destroyed several of these smolt-killing weirs last year. This matter of taking the smolts must not be allowed to go on; for, in the first place, it is totally illegal; and, secondly, it harbours gangs of poachers who go over into the adjoining district, the Seiont, and do much mischief. I understand from a gentleman who knows the Dolbenmaen river well, that it would amply repay watching and cultivation; that, in his opinion, it would in two or three years improve quite as much and even quicker than the Seiont has already done. The same things as regards the running of the fish and other matters were said of the Seiont, when it was first formed into a district; but under the able management of Mr. Manley, of Carnarvon, the Seiont has wonderfully improved (see Report, page 14); and it is probable, almost certain, that the Dolbenmaen would improve also. I brought this matter before the meeting of the Board of Conservators of the Dovey district, the matter was thoroughly discussed, and a resolution to the following effect put and carried:—"That it is desirable that the Dolbenmaen river should be put under the protection of the Salmon Acts of 1861-5, and that the riparian proprietors should be requested to allow this river to be placed within the limits of the Dovey fishery district as defined by the official notice. 2ndly. That if the Dolbenmaen river be placed in the Dovey district, the proprietors should give their gamekeepers warrants as water bailiffs, and that any revenue derived from licences for fishing in the river should be applied to the preservation of the river." I have been in communication with the largest landed proprietor in the district, Lord Newborough, and am in great hopes that the above resolution will be carried into effect; for, really, it is a great pity the splendid spawning grounds on this pretty little river should be so utterly wasted and destroyed.

THE LUNE.

I am informed on good authority that the netting on the upper waters has been productive beyond all precedent. Upwards of 1,000 fish have been taken in the upper

waters only. Out of one pool in one day the proprietor took 52 salmon weighing 620 lbs. (besides other catches of 40 fish odd, and of smaller numbers at various times).

THE SEIONT, GWRFRAI, &c.

It gives me very great pleasure to be able to report the satisfactory progress made in the Seiont district which was formed in the year 1867. The Seiont joins the sea at Carnarvon, and I was informed that these last two or three years shoals of salmon have been seen frequently sporting about in the sea by passengers when crossing the suspension bridge at Bangor. Since my last report an admirable pass has been erected at Seiont Slate Mills; formerly there was a ladder on the face of the weir, but it was of no use; a diagonal was then placed, but it did not answer. The Board have now constructed, under the superintendence of Mr. Manley, a secondary weir below the original weir. This secondary weir is made of rough slates, built edgeways into a stone framework, &c., made watertight by clay puddling. In its centre a groove, some three or four feet wide, has been left so as to concentrate and utilize the water. Before the secondary weir was made to this Seiont Slate Mill, which is the key of the river, large numbers of salmon were thrown back every year, and were poached; now, however, they go up with the greatest ease. At Pont Newydd, there is a natural obstruction situated close to the village, the inhabitants of which formerly made a regular practice of spearing the salmon. These rocks have now been judiciously blasted here and there, and the fish readily pass up over the passages made for them, thus escaping destruction at the hands of the villagers and adding stock to the river.

A salmon passing over this obstruction has nothing further to stop him till he gets to a weir at the exit of Lake Cwellyn; the name of this weir is Nant Mills. By judicious blastings, and the concentration of water by boards placed across certain natural openings in the rocks, the water now forms two predominant currents, up which the salmon ascend with ease. They thus are enabled to surmount a natural obstruction of about five feet in height immediately above the weir. This is done by means of a board fixed across a narrow rocky channel, so that in fact the height of the natural fall is diminished by about one half. This board is fastened in its position by an ingenious application of iron rods fixed into the solid rock with lead. Owing to the alterations at the Nant Mills, which, however require a little further improvement, and the weir below, salmon for the first time have gained admission into Lake Cwellyn; under the foot of Snowdon, where they had never been seen before. Salmon fry have also been taken in the lake. Above Lake Cwellyn there is another small lake, called Llynnygadr, or the Lake of the Chair. The stream which joins these two lakes is one of the most perfect spawning beds I ever saw. It consists of beautiful gravel and crystal bright water, with "hides" and holes for the fish. I carefully examined the tributaries which flow into Llynnygadr; they all arise from flat peaty ground, and do not contain any spawning beds. I therefore strongly advise that the fish which pass through Cwellyn Lake should be confined to the spawning ground between these lakes, which is about two miles long, and I have pointed out to the water-bailiff the spot where I think the grating should be fixed; it is about 150 or 200 yards below Rhyd-ddu Bridge, where there is a turnpike.

Whereas the spates in the Seiont are not very heavy in the summer and autumn months, and the fish naturally stay out at sea at this time, I advise that, both for the sake of the milling power and the fishery, the water in Cwellyn lake should be pounded up so as to make a reservoir from which water could be let off at will. This might easily be done by making gates at the two arches of the small bridge from which the river finds its exit from the lake.

The land on the banks of the lake appeared to me to be simply bog covered with rushes, which would be none the worse for flooding, and I do not think the proprietors of the land around the lake would object at all to this plan being carried out. I strongly commend this idea to the Board of Conservators.

There can be no doubt that the Seiont is naturally a late river, and there is good evidence that the fish are in beautiful condition till the middle of September; to the middle of September, therefore, I think fishing with the net ought to be continued in the estuary and in the river. The local fishermen would then have no cause of complaint, whereas they now grumble much at the fishing being stopped by law just at the time when salmon take the river in the greatest numbers. At a meeting the chairman and the secretary both agreed that rod fishing should be allowed in the month of November, say to the 15th. A strict enactment would be enforced by the Board that no gaff should be used, and that all female fish should be returned to the water.

The finest fish in the river do not ascend till the end of October and beginning of November, and it is a pity that the upper proprietors should not be allowed to angle for them. The great improvement shown in the Seiont is mainly due to the praiseworthy energy of H. P. Manley, Esq., who has been most assiduous in carrying out prosecutions for offences against the Salmon Acts. By the official returns it will be seen that, without any expense to the Board, heavy fines were inflicted on 16 persons for offences under the Acts in the year ending October 1871; this has created quite a panic amongst the poachers, no case of salmon poaching having been reported to the Board since that date. No less than 43 nets have been seized in three years, as well as gaffs, spears, &c. innumerable. The fishermen, though at first opposed to the formation of this district, are now beginning to see the advantage of preservation.

Mr. Manley wishes very much for several alterations in the law, and especially for, 1st, power to search pockets, &c., as unfair anglers now carry fabulously large pockets, into which they put salmon, fry, &c., and thus defy the water-bailiff.

2. That the power of search warrant given by section 34, Act 1861, which now lasts only one week, should be extended to at least one month, or, better still, the whole season.

Amendment in the law as regards these two points is much required for the further development of the natural resources of the Seiont and adjoining rivers.

The latest report from the Seiont is that, early in the spring of 1872, two fresh run fish were seen in the river by Mr. Whitehead, chairman of the board. There has been plenty of water in the river during this spring, and it is satisfactory to see that now there are plenty of salmon in the river clean fish will run up in the early months of the year.

THE STOUR (CANTERBURY).

It will be recollected that six years ago efforts were made to restore the fisheries of the Canterbury Stour, which for many years had been quite neglected. Up to a recent date, viz., 1866, this little river had been regularly fished by a fixed engine, a net with a pocket and wings, which being extended from bank to bank of course commanded the run of all migratory salmonidæ. A return of the number fish caught in the net, showing a gradual diminution, will be found in my Report for 1868, page 27.

This net has now been done away with, and the fishery has been leased by the Stour Fishery Association from the mayor and corporation of Fordwich, who have the legal rights. Although this net has been abolished, and a strict system of preservation instituted, I sincerely regret that it is my duty to report that the capture of migratory salmonidæ has not increased.

The praiseworthy efforts of the association have not, however, been quite in vain, for the portion of the Stour above Canterbury now contains a very fine stock of common (non-migratory) trout, which have afforded excellent sport to anglers. More fish have been taken in these waters than in any preceding year since the formation of the association. This is a plain proof that the upper waters of the Stour are most suitable for the spawning of the salmon.

It is now necessary to inquire how it is that the experiment of the multiplication of the migratory salmonidæ has apparently failed.

Since protection has been instituted there can be no doubt that a very considerable stock of living fish have been added to the river; the intelligent and active water-bailiff, Mr. Hogbin, tells me he has observed in the season 1871-72, no less than *thirteen* nests of Fordwich trout. In my report for 1870, I reported "during the last three years many fish have made their nests naturally; in some places the bed of the river was ploughed up with them."

Suppose for the last four years there have been in each year thirteen nests made,—there have in reality been many more than this,—we shall have the following figures:—We will put each female who makes a nest at the low average of 5 lbs. or 6 lbs., and that would give for each year 65,000 eggs laid, or in four years 260,000 eggs laid. Supposing only one-quarter of these had come to be fish, we should have a stock of 65,000 smolts in the four years, or 16,000 every year. This does not take into calculation the large number of salmon bred artificially by Messrs. Kingsford, Dowker, and Cooper. Where then can all these fish have gone to,—how is it none return?

1st. Then, I believe, they remain out in the estuary, and will not take the river till the netting season has closed. It has come to my knowledge that a considerable number of salmonidæ have been sold in the Ramsgate and Margate markets. These fish were fresh caught—not iced fish from London. What other river but the Stour could have bred

these, except, may be, a few small tributaries of the Medway which sometimes have fish in them?

2nd. The Stour is naturally a late river, and I do not think the fish will take it till the legal season is over.

3rd. A regular system of netting, especially in the estuary, has not yet been instituted; on two or three occasions only has the net been used.

4th. I do not think an ordinary draught net is the proper instrument to catch fish in the Stour. As I have observed in former reports, local experience always points out the best and most economical way to catch fish in an individual river. The fixed net of the corporation at Fordwich cannot be legally used without a free gap in it, and if the 27th section of the Act of 1865 be put in force, the net would become practically inoperative. Yet it is my opinion that this fixed net is the proper instrument for catching fish in the Stour, as it catches them by ones and twos as they run up in the night, the net never being used in the day.

5th. The pollutions of Canterbury have a great deal to do with keeping the fish back. The sewage and other abominations from the city of Canterbury, the population of which is over 20,000, are collected and carried by means of a long culvert to a point in the river a few yards below the bridge at Fordwich. Having twice examined this place I can testify to the horrible state of the river at this point. Not only is the effluvium very bad, but a delta of sewage is gradually collecting in the bed of the river, from which noxious gases must be continually issuing, tainting the water for a long distance below. In fact, the sewage of Canterbury ought not to be put into the river at all; it should be utilized by placing it on land.

6th. The "blowboats" must considerably affect the run of the fish; these blowboats are ingenious contrivances by means of which the bed of the river is kept clear of mud. When the blowboat is at work dense clouds of mud are stirred up in the river which must of necessity considerably affect any fish below. There are two of these boats, one working from Fordwich to Sandwich, and the other from Sandwich downwards. These blowboats therefore pass down the sewage from one spot to the other. The Fordwich blowboat having taken it down to the end of its beat, the Sandwich boat carries it on. The upper blowboat is wisely not worked during the fishing season, but the Sandwich boat is worked all the year round. I regret to say that the corporation have declined to restrict the working of the boat for the benefit of the fisheries.

I should like to hear that there were no blowboats at work from April to September, both inclusive. When these blowboats are working salmonidæ often come up before the boat half suffocated with the mud. These fish are returned to the water immediately on the upper side of the boat. Before the Sandwich blowboat last season have been caught 17 fish; before the Commissioners' boat, 7.

The benefits already conferred upon the Stour are entirely due to the members of the Stour Fishery Association, and especially to the energy of the Hon. Secretary, Mr. Montague Kingsford, and other gentlemen.

Many of these have subscribed annually to the association in the hope of restoring salmon to the river, and a great deal of money has been spent with this object. For my own part I do not altogether despair, for, though the money has been spent I believe there is—at any rate there ought to be—a considerable number of migratory salmonidæ in or about the estuary of the river. We know as a fact there are fish about, but they never appear till late in the year, and we must hope that they will eventually be caught.

The destruction of pike in the river has been steadily pursued, and during the past year very close upon the large number of 2,000 pike have been destroyed. Of these over 700 were captured above Sturry, the remainder between Sturry and Winchester.

The salmon pass upon the pool system at the Black Mill continues to work well.

THE TYNE.

Of all salmon rivers in England the Tyne is foremost in promise for the future, and she has already done herself immense credit for the past; nevertheless a great deal remains to be arranged so as to develop her resources to the utmost. The most important of these questions is that of hang nets as used in the sea near the mouth of the river and in the estuary.

A curious point has arisen in reference to the condition of salmon caught in hang-nets; the general rule is that salmon caught in the sea are much better for the table than those caught in fresh water. Upon reference to the Report by Mr. Young and myself on the Scotch Salmon Fisheries, ample evidence to the above effect will be found. It would therefore naturally be supposed that, by the same rule, salmon caught in hang-nets off the

mouth of the Tyne in the sea by means of hang-nets would also be superior in flavour to those caught higher up the river. The chairman of the Tyne Board of Conservators, Mr. Cuthbert, insisted that the salmon caught in hang-nets were very inferior for the table to those caught in fresh water, and that he had known this for a fact from childhood. This being a contradictory bit of evidence, I made it my business to inquire closely into it; I therefore examined two or three fish caught in hang-nets; I found their flesh to the touch flabby and to the taste unsavoury. Mr. Brown, fishmonger, of Newcastle, who has had long experience of Tyne-caught fish, informs me that there can be no possible doubt of the matter; the fish are caught in the mesh of the net either by the gills or just behind the gills; "they are both hanged and drowned; they become soddened with water and "very inferior as food."

The hang-nets being down for many hours together, the majority of fish taken in them are found dead and blown out. The landlady of the hotel at Tynemouth told me she would not put a sea-caught Tyne fish on her table for her guests; "they are nasty insipid woolly things;" those, on the contrary, which are caught in the Duke of Northumberland's fishery at "The Hard," almost opposite the hotel at Tynemouth and but a short distance from the sea are very good, because, as she expressed it, they are "*felled*." The physiological meaning of these facts is that in the case of a fish who slowly dies an agonizing death in a hang-net the muscular fibre becomes deteriorated through struggling, and, moreover, when dead is submitted many hours to the action of water, which, as every angler knows, is very injurious to the flesh of a dead fish. In the case of a fish, on the contrary, caught on "The Hard" the creature is swiftly taken out of his native element, a blow on the head is inflicted, and the vitality of muscular fibre will remain some hours after death. This may be easily tested by the observer, who has only to hit a freshly caught fish smartly with his finger, and a weal is instantly seen to rise. The appearances which take place when a fish is crimped, where the flesh stands out in large knobs, will show what I mean by the vitality of the muscular fibre.

The natural deductions from the above facts are, that stake-nets, as far as the condition of the fish is concerned, are preferable to hang-nets; in fact Mr. Brown says that he would much prefer a stake-net-caught fish to a hang-net fish. Were there no salmon laws in existence, it would be quite certain that the fishermen would at once resort again to stake-nets as the easier mode of fishing, for stake-nets will fish by themselves, whilst hang-nets require the attendance of a man. Again, a hang-net when fixed is a more killing instrument than a hang-net floating. When a fish touches the former he is caught at once; when he touches the latter the sole and head rope come up together, and the net being very flexible when suspended in the water, he has a better chance of escape than if it were tense, like a wire rabbit fence; for a salmon in distress never goes backwards: he always pushes forwards. Of course it would be absurd to talk of putting up stake nets again in the mouth of the Tyne, as it would be totally illegal. But I am not at all sure that more fish are not caught by the hang-nets than would be by the stake and bag nets. These fixed engines could only extend a certain distance out to sea, whereas hang-nets command a very large area of water, many of them being so long that it is almost impossible to tell which boat among the many is at the end of an individual net. The fishermen even now know quite well that these hang-nets when made fixed become more deadly. A net fixed with stones was taken one Sunday morning: it was two miles and a half long. The active and intelligent head constable of the Tyne watchers showed me an immense pile of about forty hang nets which had been seized. Ten had been seized for fishing in weekly close time, the rest for being used as fixed engines. Some of these nets were 160 yards long, and two, three, or more are joined one on to the other, so that a wall of netting of a tremendous length is stretched across the path of the salmon. The poachers do not often use long sheets of nets. They set their nets in two or more places, because if they put all the nets together, and they were seized, it would be a heavier loss than if the nets were divided into two lots, and the risk of capture divided. St. Mary's Island is a great place for poaching. When hang-nets are used as fixed engines they are generally barked or tanned, and fixed amongst rocks where salmon come at night. In the dawn of the morning the salmon commence playing about, and the nets being the same colour as the rocks, the fish easily get meshed.

The Tyne-bred salmon doubtless go a very long way out to sea. Captains of vessels have seen them near the Doggerbank, some sixty miles at sea, towards the end of May, and shoals of them have been seen 15 miles out at sea during the summer months, heading for Tynemouth. As these shoals of salmon converge towards the mouth of the river they are cut off by the long hang-nets. This is proved by the fact that the hang-

nets sometimes fish for hours and catch nothing, and all of a sudden the fish strike the net. Again, one net will catch no fish, while a net in close proximity will catch many. Thus a net was fishing near the end of the south pier, and, in a few minutes, fish to the value of 30*l.* or 40*l.* rushed into it, while the nets close by were fishing blank.

I understand that the Scotch boats have not interfered so much with the local fishermen this year as before; the latter, being jealous of what they considered to be a kind of private right, took means to drive them away, and they went away. There was a fleet of between 40 and 50 Scotch boats, which came from Buckhaven and as far off as St. Monance, in the Highlands.

Hang-nets cannot be used equally well at all times of the year; thus they cannot be worked in stormy weather, and after the weather settles the water often becomes so clear that the fish will not take the net at all; they see the net, and will not go into it. There is another fact about hang-nets which must be mentioned. Many times during the season, I am informed by Robert Armstrong, the water-bailiff, storms come on so suddenly that fishermen are forced to leave their nets, which drift about the sea for days. Armstrong has seen as many as 30*l.* worth of salmon driven ashore dead, and fixed in the nets. The fish were in a state of decomposition. This is a frequent occurrence. There can be no doubt that these hang-nets require great regulation. To put the facts epigrammatically, "the destructive power of man is overbalancing the productive power of the river."

Mr. Harbottle, who has very great practical experience of the matter, considers that if these hang-nets are not regulated (they were first introduced in 1867) the salmon will be entirely rooted out of the Tyne; and for this reason, even if there were no other, I earnestly hope that the new Act will be passed this year giving boards power to make byelaws as to length and mesh of nets in the rivers along the coasts under their immediate charge. It will not do to do away with hang-nets altogether. There should be a fixed sum for a certain length of net, say 100 yards, and an extra sum charged for every yard over the hundred yards length.

Care must be taken not to diminish the revenue by enactments that would prevent any licenses at all being taken out, and it must be remembered that the fishermen have these nets now ready made and fitted, and if they were not allowed to use them at all they would at once begin to poach with them, and this would require much extra watching. If the board had power to make byelaws, all these matters would doubtless be soon settled to the satisfaction of all concerned.

Another important point must be noticed. A resting place for the salmon coming in from the sea is urgently wanted by the Tyne; there should be a certain limit marked out by conspicuous buoys placed at the mouth of the river showing the distance within which it shall be illegal to use nets for the future. The distance should be a mile and a half or two miles from a buoy anchored in mid stream about opposite Tynemouth pier. If this were done it would give great satisfaction to the upper proprietors, and in my opinion eventually increase the produce of the capture of the net fishermen. I trust also that the new Act will include this valuable provision. A precedent for it (as regards fixed nets) is found in the Scotch Acts, whereby estuaries are marked out for the mouth of each river.

There is an important question connected with hang-nets which I think has not been sufficiently noticed as yet, it is that of bull trout. I have received ample evidence that bull trout are greatly on the increase in the Tyne, and I think that the hang-nets have much to do with this alarming fact. The hang-nets are of such dimensions as to retain the great majority of the salmon proper while the bull trout, being of a smaller size, wriggle through the mesh of the net and escape up the river; the consequence is that the salmon proper are, so to speak, handicapped.

The above facts may be illustrated by cutting a square of 3 inches on paper, *i.e.* representing the hang-net with a mesh of three inches from knot to knot, and trying what size fish will go through it. In the case of the Coquet (the neighbouring river to the Tyne) experience has proved that in the "struggle for existence" the salmon have disappeared before the bull trout. In the case of the Tyne the efforts of man also are practically against the salmon; it therefore becomes a great question whether nets of smaller dimensions than three inches from knot to knot should not be used in the Tyne specially for the destruction of bull trout, as under the present regulations it seems difficult, if not impossible, to keep down the trout by means of hang-nets. A question of otherwise destroying them becomes of the utmost importance.

Sergeant Harbottle tells me that the bull trout get up to the head of the North Tyne, and the Reed nearly up to the borders of Scotland, and he would like to have liberty to catch

and kill them off the spawning beds.* I have my own ideas as to how they should be got rid of. This question of the predominance of bull trout over salmon in the Tyne is of most serious import for the future. It has often been a matter of astonishment to others as well as myself how the salmon get through the terribly polluted water of the Tyne at about Newcastle Railway bridge; I made it my duty to examine the water at low tide under the bridge; it was positively stinking and the banks were covered with foul mud. I observed two draft nets, nevertheless, worked within a few yards from the very place. Sergeant Harbottle informs me that this foul water is very deadly to descending smolts, and that he has picked up hundreds of them dead below the bridge, but much depends upon the weather at the time of migration. If there is a fresh in the river the smolts get through to the sea with safety; if the water is low many of them are poisoned; but few adult fish, however, are poisoned because the salmon run at first quarter ebb, i.e. from one to two hours after high water; they like to go *against* stream.† Again, it is said that the salt water runs up the middle of the river and pushes the polluted water away to the sides.

Another great fact must not be forgotten; the two branches of the Tyne, draining 1,053 square miles, in wet weather bring down such a volume of water that it sweeps out bodily a great portion of the pollutions of the Tyne, or else so dilutes them that the salmon are not sensible of their pernicious effects. The tributaries of the Clyde do the same thing, and reasoning from the case of the Tyne, I do not see why the Scotch Clyde should not again become a salmon river.

There can be no doubt that the destruction of Bywell dam has opened up a large area of spawning ground as well as angling water. The fish having passed the spot where Bywell dam once stood, arrive at the junction of the North and South Tyne. The distance from this point to North Shields is about 35 miles. The difference of the colour of the water of the North and South Tyne at their junction is very remarkable, the North Tyne water being very pure, that of the South Tyne being of a greenish tint, on account of the pollution from the lead mines which abound on its banks.

The great majority of the fish therefore, as may be expected, go up the North Tyne. At the request of the Board of Conservators, I have examined two dams on this river; the lowest is at Humslaugh mill, close to Chollerford station. Mr. Ridley, vice-chairman of the North Tyne Committee, examined the dam with me. It is such a low‡ though very long dam that I really do not think it interferes with the run of the fish, except when the river is at a dead low summer level. I suggested a few minor alterations, which I trust may be of use.

Woodburn dam, above this on the Reed, has been wisely bought by the Board of Conservators, and has been utterly demolished. I am glad to report that the demolition has been complete; the stones are all taken out of the river and piled up on the bank. About seven miles of water have been opened up for fish by the destruction of Woodburn dam. I examined Otterburn dam a few miles above Woodburn very carefully, as the Board wished to know my opinion on it. It is a sloping weir, the slope being about 30 feet, the total length of the dam at dead low water about six feet. The water diverted by it goes to drive a small mill. The stones, timber, &c. of which the weir is composed are so rotten that it would by no means be advisable to attempt to touch it, or to fix a pass on its surface or to its substance. After a careful examination of the locality, I have come to the conclusion that the best thing to do will be to make a secondary weir below this dam, utilizing the three little islands below the weir as part of the secondary weir. If this plan be adopted it will be only necessary to block up three small streams which run by the sides of these islands. The only fear is that the banks, being of a sandy character, may possibly give way. I do not think this likely if the work be done carefully, and the stones of the new weir arranged according to the plans I have laid down. I proposed to the Board that this Otterburn dam, like Woodburn, should be purchased and pulled down, but it was at once advanced that the remedy would be worse than the disease, for it appears that the dam is really of great use to the fishery, inasmuch as by its presence a pool some 11 or 12 feet deep, and some

* Bull trout also eat the salmon eggs. Sergeant Harbottle reports:—"When I was fishing for salmon to take their eggs on the North Tyne on the 18th December 1871, I caught a great many bull trout; two of these disgorged salmon eggs. By a slight pressure of the hand, I squeezed out of their stomachs nearly three wineglassfuls of salmon eggs, which would be between two and three thousand eggs. These bull trout weighed about a pound and a half each." (I have a cast in my museum which illustrates a similar case to the above.)

† My friend Mr. Lee tells me that it is a well-known fact among the fishermen that fish will frequently bite at the hook on the commencement of the ebb tide, having lain apparently dormant at the last of the flood and remaining so during the succeeding flood.

‡ It is 2 feet 5 inches from crest to toe. The platform below it is 8 feet 7 inches long.

two miles long, is formed. This pool becomes a covert and hiding place for the descending kelts and fry, and is also an excellent angling place for salmon when they come up the river as high as this point. I quite think therefore that it would be most advisable to make Otterburn dam passable for fish, but it would never do to pull it down altogether.

SOUTH TYNE.

In a Report three years back I stated it was not advisable to let the salmon up the South Tyne at all. At the request of the committee of the South Tyne, I have made a fresh inspection of this river, with a view of reconsidering the matter. The South Tyne is 33 miles long, and it is terribly polluted by the washings of lead mines on its banks. There are also collieries which send water of a blood-red colour, and colouring the river for many yards down. The main bed of the river appears to me not to be favourable to spawning ground, as it is covered with large rocky boulders, and gravel banks do not appear to be numerous. There are several small brooks which run into the South Tyne, the water in these is unpolluted and the spawning ground favourable; I therefore advised that the salmon should, if possible, be coaxed up these burns out of the main stream, and this might be done by arranging the big stones in the bed of the river in a semicircular form so as to make a lead for the fish, and attract them from the river into the burns. Artificial spawning beds should also be made, and a watcher put on to patrol the district.

Through the kindness of the Chairman of the Board, I have received regular reports from the water-bailiff put on to the South Tyne. He has made alterations in the brooks, and has made artificial salmon beds according to instructions. On the 7th of November he reports four salmon as spawning in the brooks, but the rest of his reports as to the salmon taking these brooks are not very satisfactory. It may be possible that they have not as yet found out where the spawning beds are; we must therefore hope that better results may ensue next year.

From personal examination and report of the water-bailiff, I am in a position to state that Warden paper-mill dam is a most serious obstruction to fish. We read: "On the 26th of September there were about two feet of water running over the dam; there were a good many fish trying to get over the dam, but could not get over. On the 10th of October six fish passed over the dam, and on the 26th of October there were a great many lying at the back of the dam, and, 13th November, no fish can get over at present." In fact, there is abundance of evidence that many salmon come up the South Tyne and are stopped temporarily, and I am afraid more often permanently, by the Warden dam.* It is therefore most desirable that a passage should be made for them so that they can get by this very serious obstruction. The Warden paper mills are too valuable to admit of the possibility of buying up the dam. There is a diagonal board fixed upon it, but it does not act well, on account of its great length. There are three ways of passing the fish up above Warden dam; first, by utilizing the waste hatches; secondly, by making a connexion between the pool at the base of the weir with the mill leat itself; thirdly, by further developing the subterranean way up which salmonidæ now naturally go. (See Report upon salmon ladders, p. 21).

The proprietor of Warden paper mills assured me that he would take every precaution to prevent refuse chloride of lime and other noxious matters going into the river from his works; the catch-pit employed is, however, a great deal too small to be of any practical utility, and I know that waste chloride of lime is let down the mill leat instead of being put into the catch-pit. In the month of November last fish dead or dying were seen in this mill leat when the chloride of lime was let to flow into it.

ABSTRACT OF BOXES OF SALMON DELIVERED IN BILLINGSGATE IN THE YEARS 1865-6-7-8-9-70-71.

By the kindness of Messrs. Forbes, Stuart, & Co., who have for many years past afforded me so much information as regards salmon from a commercial point of view, I am enabled to fill up the columns of this return for 1871.

Although that it would appear that there are 167 boxes less than last year, it will be interesting to compare the 1871 numbers with those of 1861, which were 442, or of 1865, which were 868 boxes, and to go further back still, in 1859, 86 boxes; in 1845, 46 boxes. In fact the increase in 1870, being nine years since the Act of 1861, has been more than sevenfold. As I have often said before, this is the return only of a private firm. Who can say after this that the Salmon Acts have not done immense good? It must not be for-

* The sluices connected with the dam should be opened from Saturday night to Monday morning, when the mill is not at work.

gotten that great numbers of salmon are also consumed in Birmingham, Liverpool, and other large provincial towns.

—	Scotch.	Irish.	Dutch.	Norway.	English and Welsh.	Total Boxes.	Total Weight.	Value.
							Tons.	£
1865 - -	19,009	6,858	1,479	29,283	868	29,283	1,464	190,296
1866 - -	21,725	9,326	1,772	1,632	1,563	36,018	1,801	218,521
1867 - -	23,006	5,411	1,203	1,296	2,405	33,321	1,666	213,803
1868 - -	28,020	3,487	807	407	1,725	34,446	1,722	233,084
1869 - -	20,474	8,800	637	696	1,843	32,450	1,622	227,150
1870 - -	20,648	9,211	626	852	3,120	34,457	1,722	213,059
1871 - -	23,390	7,379	516	1,037	2,953	35,275	1,764	217,854

Average weight of each box 112 lbs.; average value taken at 1s. 1½d. per lb.

SALMON LADDERS AND PASSES.

Having now studied the construction of salmon passes for many years, I have great pleasure in announcing that, to the best of my belief, I have made a discovery which may be hereafter of infinite service in getting fish past obstructions. I allude to the formation of *tunnels* for the use of the fish.

It has been said that fish will not run up into a dark passage. The fact that they are so often caught (or, rather, poached) in dark arches connected with mills led me long ago to the conclusion that, at all events, it would be advisable to try and utilize this instinct of the fish.

Partly by good fortune, partly from vague stories that had reached my ears, I was led to examine some fields at a considerable distance from the Warden dam, which I have before said commands the South Tyne. The surface drainage of these fields is conducted into two reservoirs at some considerable distance from each other, and is used by the paper works connected with the dam. These reservoirs are each about ten feet wide and eighteen feet long; the water from these reservoirs is carried by an earthenware pipe fifteen inches in diameter, *and buried from ten to fourteen feet in the earth* down to the dam, and empties itself out close to the foot of the dam. During the season 1869–70 the reservoir nearest to the pool was found to be full of fish, and many fish were also caught in the second reservoir. The first reservoir is 350 yards from the dam, the second reservoir is 58 yards from the dam. There can be no doubt that what happened was as follows:—Arriving at the base of the weir, the fish “nosed” about its base, endeavouring to find a way over it; after a while they discovered the exit of the earthenware drainage pipe above alluded to, and then they swam up this drainage pipe till they arrived at the first reservoir; not content with this, they made a further push, and ultimately arrived at the second reservoir. Now, had either of these first or second reservoirs been connected with the river itself by means of another branch of the 15-inch earthenware pipe, the fish would have passed *round the side of the weir by means of a tunnel*. The total distance from where they entered the pipe at the base of the dam to the upper reservoir is 408 yards.

I consider this a most remarkable fact, as it shows us that where conditions are suitable the expense of a salmon ladder or pass of any kind can be entirely avoided. It is only necessary to bury an earthenware pipe at any easy gradient deep in the ground and the fish will make use of it at the proper time.

That my statements are not liable to mislead can be proved by the report of the water-bailiff, who reports that on the 19th of December 1871 he took no less than 36 fish out of the reservoir in the field above the dam and put them into the Tyne. Between the 19th and 25th of December he took 26 fish out of the reservoir and put them into the Tyne. Between the latter date and the 3rd of January 1872 he transported no less than 46 fish from the reservoirs to the Tyne. In the following three days 36 more fish were similarly treated. From this report, therefore, it will be seen that from the 19th December 1871 to the 6th of January 1872 he removed no less than 144 *fish which voluntarily ran up this drain pipe buried deep under ground and in the dark*, and would certainly have passed into the river above the dam if there had been a connexion between the reservoirs and the river. The theory is that only bull trout will go up this tunnel; I firmly believe salmon would go up also if they had the chance.

In my former Reports I have often urged the advisability of making a connecting cut between the mill-leat and the pool, at the base of a weir where the salmon assemble, thus

avoiding any interference with the dam itself. The proof that this system is a good one is the admirable way in which the pass at Acklington on the Coquet (a model of this pass is in my museum) has practically worked ever since it was built. The idea of this was, I believe, due to Mr. Tait, of Acklington, agent to his Grace the Duke of Northumberland. In the case of Acklington the connecting cut in the bank is partitioned out into steps, but if the principle I advocate is a right one it will be possible simply to tunnel through the bank that intervenes between the bank and the pool.

The principle of a tunnel for the passing of fish has already been adopted in Scotland. The smolts descending the river Ness near Inverness are apt to get into the canal and be lost. An earthenware pipe, 15 inches in diameter, some 50 yards long, therefore, has been buried in the ground, one end being situated just above the lock gates, the other end being on the bed of the river. I am informed that the smolts do sometimes go down through this tunnel, but they are rather shy of taking it. I am not much surprised at this, as although it is not contrary to the instinct of the fish to run up into a dark place, yet it is contrary to their instincts to be carried down by a stream into a dark place; but that fish would find their way up it I am convinced were the locality favourable.

There are several weirs in the country where this system of tunnelling might be adopted. The weir at Dunmere Waterworks on the canal near Bodmin (see water-colour drawing in my museum)—in spite of the efforts made to improve and render efficacious the pass which was fixed upon it some years ago, and which has radical faults—still remains a great barrier to fish. The rock on the south side of this weir is admirably adapted to the formation of a tunnel; this can be made of any desired width, and being prolonged up stream can be planned out at a very small incline. The expense of this or else an open cut round, would I understand be about 50*l.*, and it is much to be regretted that the money for this act of public utility is not forthcoming.*

A very ingenious and novel form of fish pass has been invented by Mr. Mostyn Owen, secretary of the Dec Board of Conservators. This plan is especially adopted for the passing of fish through anicuts or weirs of the large Indian rivers, and the plan will, I believe, be adopted by my friend Dr. Day, Inspector of Fisheries in India; but there are, however, localities in England where this system may also be adopted, where it is desirable to give fish a passage *through* dams. The actual construction of this form of pass may be understood by a model at my museum, or I shall be glad to send any one drawings of it; suffice it here to say that the principle adopted is that of a fish going through an opening *which is always under water*. Having passed the opening, the fish would find itself in a chamber (as it were) of water, which would offer little resistance to its progress. The invention of this pass will explain the action of the 1-foot square hole in the Knapp milldam on the Avon, and other Hampshire rivers. This 1-foot square opening is, under the present condition of things, almost inoperative, the reason being that the water on the lower side of the hole is *below* the level of the water of the upper side of the hole. If the water on *both sides* of the hole were nearly on the same level there would be nothing whatever to prevent the fish either ascending or descending through it.

The principle involved in the pass for Indian irrigation weirs is of the greatest importance in the management of passes now at work in England. When examining the ladder on the Pool Quay weir on the Severn in dry weather, I discovered in the topmost chamber several scales of fish, which I pronounced to be perch scales. These scales had evidently been knocked off the fish by the force of the water turning them round and round violently in their efforts to get through a hole at the top of the ladder, which acted as a flood guard. If perch and roach could come up a salmon pass, there could not be very much the matter with it. The fault, in fact, lay in the exit of the pass. On a subsequent occasion I again examined this ladder at Pool Quay, and discovered two perch and some white fish swimming round and round in the top chamber; they every now and then tried to get through the opening, but were instantly washed back again. The mechanical reason of this is very simple; the highest stop or cross bar in the pass was below the level of the top of the square hole, and the rush in consequence was, as it were, "down hill," and had great force. By simply nutting a board with iron pegs against the upper side of the top cross bar, the water immediately was so heightened in the uppermost pool that the rush immediately abated, and I was pleased to observe that all the fish that had hitherto been struggling in the upper pool at once passed through the opening. I mention these details because I feel convinced that the principle of making "water fight water" should always if possible be adopted. By the above expression, I mean that when water is running out of an aperture it should not be allowed to impinge against boards, stone, &c., but against water raised below it.

* I shall try to get the money somehow, as the experiment is really of such great public importance. If tunnels for fish succeed we shall want no more ladders or passes.

This principle will serve as a basis for the construction of an efficient fish pass through the old culvert at Dinsdale dam on the Tees.

The canal weir at Penarth, near Newtown, has long been a serious obstruction to fish. A pass is now in operation in connexion with this weir. The system of a secondary weir has already been tried, but failed, the violence of the floods sweeping away the material of which the secondary weir was composed, it being very difficult to get a foundation on the slippery rock which formed the bed of the river; the principle of making a cut round by the side of the weir has therefore been adopted. The pass consists of seven large pools, each being about 10 feet long, and containing about 3 or 4 feet of water. The bottom is the solid rock, and varies in depth. It is to be remarked that my colleague and myself have recommended to the engineer the adoption of the principle which I first observed in the Deanston pass (see Scotch Report, p. 131, 1871, and English Report, p. 21, 1871). It is that the sides of the ladder should gradually be widened out from the top to the bottom, after the fashion of a pair of compasses partly opened. The design of this is to prevent the water boiling too much in the pass. When the sides of a pass are made quite parallel to each the water is likely to become compressed and therefore increased in velocity; if the sides, on the contrary, are opened out this difficulty is obviated. Penarth fish ladder has, however, one defect which, however, will be remedied: the lowest chamber of the ladder is not always under water. This is a great point in the construction of salmon ladders, as Mr. Mostyn Owen has often pointed out; by rights the fish should firstly be attracted to the base of the ladder by the predominant current; and secondly, they should arrive in the lowest chamber of the ladder, as it were, without knowing they were in the ladder. The stops at present run right across from side to side. It was too late in the season to cut notches in the stops, but this will be done during the ensuing summer if it be thought desirable by the Board of Conservators. The entrance to the pass is arranged so as to be six inches below the level of the weir, so that all superfluous water is utilized.

I was pleased to find on inspection that within a few hours after the sluice at the head of the pass had been opened there were two large fish swimming about actually in the upper pool of the pass, a sign that they had found it out, and a hint that the upper stop required a slight alteration, which has been carried out.

By the kindness of Mr. Alfred George, Superintendent of the Upper Severn, I am enabled to give the following report of the working of Penarth during the past winter spawning season:—

“I have not actually seen any fish; use the Penarth ladder myself, but Lloyd, the water-bailiff, has reported to me several times that he has frequently seen fish enter and pass up it; he says, however, that they have a difficulty in finding it; that they continue to leap at the weir as before, and when they become tired, retire into the slack deep water at the foot of the pass, and then they find it out and go up. When the river is low, however, there is not sufficient stream flowing from the ladder to induce fish to enter.

“Cutting the openings in the steps will help to remedy the latter defect; but still, now that I have seen the ladder at work in moderately low water, I am more disposed than ever to think that the inlet is not deep enough. To help the fish to find their way into the pass a balk of timber or an old tree should be placed diagonally below it. I think they would then find their way in. When the fish have found their way into the ladder they go up with perfect ease. The defect lies in there not being sufficient lead to enable the fish to find the pass readily. The fish do not always enter the pass at the first attempt, but I think they would swim in if the opening was cut in the step; at present they leap in.”

The necessary minor alterations to the pass will be made during the ensuing summer.

A new weir has lately been erected by the Shropshire Union Canal Co. across the river Dee, just below its exit from Bala lake. The use of this weir is to heighten the water in the lake, so as to supply compensation water in connexion with the canal. The weir consists of a bye-wash extending half-way across the river and two gates or boards twelve feet wide and two feet six high; these gates are raised from below upwards, and the water then rushes with great velocity underneath them; it is therefore physically impossible for the salmon to run up *underneath* them. The hatches are generally put down in March, and about October they are entirely raised if any heavy rain falls, giving a free passage to the fish for about six months. The hatches being put down in March the kelt salmon cannot get down to the sea when they would naturally go. They have been seen waiting about in the lake as late as August. The salmon fry are also impounded in the lake, and they have been caught in the lake with the smolt coat on. Of late years a great many salmon have spawned in the rivers Twrch, Llanfar, Lliw, and other smaller tributaries which run into Bala lake. Since the erection of this weir many thousands of fry must have been detained and destroyed in the lake, thus seriously interfering with the prosperity and improvement of the Dee salmon fisheries. This weir having lately been erected, it is certain that the 25th section of the Act of 1861 should be put in force.

I therefore examined it in conjunction with Mr. A. Mostyn Owen, the Secretary of the Dee Board, and Mr. Jebb, engineer to the Shropshire Union Canal Co.; and a plan was agreed upon by means of which the fish could be passed *over* the planks which form the weir. I regret to say that the Shropshire Union Canal Co. dispute the application of the 25th section to their weir, and say they are not legally bound to make the pass required.

A long correspondence has taken place. Finally the matter has been referred by the Dee Board to a barrister who has had very great experience in the working of the Salmon Acts who, "after carefully considering the case, gives it as his opinion that there is no doubt that the Shropshire Union Canal Co. have raised or altered the weir so as to create increased obstruction to the fish, and that the 25th section of the Act of 1861 therefore applies to the case, and that the company is therefore liable to attach and maintain a pass of such form and dimensions as the Home Office approve." He also dissents from the Canal Company's engineer's position, that the simple making a pass is sufficient, as the Act says that the pass is to be *maintained* in an efficient state, &c. &c.

DIAGONAL BOARDS.

Although this plan of concentrating water by means of a board placed diagonally upon the face of a weir has met with considerable ridicule in many quarters, I must ask those who think this plan of no avail kindly to suspend their judgment.

The diagonal board placed by my advice at Skerton weir on the Lune has certainly very much assisted the fish to ascend that river during the last season. I have examined this pass when a small spate was coming down the river, and its working was to my mind most satisfactory.

The following undeniable testimony, which was sent me unasked from Mr. Sproat, lessee of the fisheries at Lancaster, will show conclusively that a diagonal board judiciously fixed can be of immense service in passing fish up a river:—

"Hill Side, Lancaster,
4th November 1871.

"Dear Sir,

"You will, I am sure, be glad to learn that the 'diagonal' on Skerton weir has proved, as is universally admitted, a complete success. The prevalence of freshes had, no doubt, everything to do with bringing the fish into the river, but it is equally certain that the 'diagonal' had everything to do with passing them upwards. Our principal takes of fish were caught above the weir in states of water insufficient to pass the fish over without the 'diagonal,' thus proving conclusively that they ascended by it only. Mr. Garnett, the proprietor of the weir, has richly deserved the warmest thanks of the riparian owners and the public by cutting the notch into the crest of the weir at the upper end of the 'diagonal,' thus rendering perfect this valuable pass. The weirs at Halton, and Fords weir above this, require to be made passable to salmon, as the pass on the Halton is unsuitable for high water, and that at Fords weir for low water; the result is that the fish are detained below Halton weir till the fresh has somewhat subsided, and by that time it is too much gone down to admit of their passing the upper one. Very large quantities of fish were detained thus during the present season."

I hope in the course of next summer that these two weirs above mentioned will be made passable.

A diagonal board has been placed, at the suggestion of my colleague and myself, at the south corner of Llanthony weir on one of the branches of the Severn near Gloucester. A small portion of the weir has been levelled out, so as to concentrate the superfluous water, and bring it under the influence of a diagonal board. This, I have every reason to believe, has been a very great success.

THE POOL SYSTEM.

The pool system continues to hold its own, and prove its great superiority to the old-fashioned narrow passes. The Low Moor weir at Clitheroe, which was so long a terrible obstacle to ascending fish, is not so any more. By the aid of very large baulks of timber pinned with iron rods on the natural rock, a series of large and deep pools are now formed. Having carefully inspected the place at the wish of the Board of Conservators, and Mr. Garnett, the owner of the weir, certain minor alterations were suggested. In order to economise the water and keep the pass in action as many hours as possible, Mr. Garnett has kindly ordered his men to open the pass every night, and when the mill is not at work, especially on Sundays. Thus then an efficient pass has been made on the pool system at Low Moor, which fulfils the two requirements demanded by the owner, namely, that the supply of water to the wheel shall not be diminished nor the stability of the weir be endangered. That this pass is efficient is evident from the report of the water bailiff, who in the month of October wrote as follows:—"I can safely say that more fish have gone past Low Moor weir than since 1867, which was a wet season, and more fish have been caught above the weir than ever I have known."

Since my last Report a ladder on the pool system has been constructed, under the 25th section of the Salmon Act of 1861, on a newly-erected irrigation weir on the Yarty,

a tributary of the Axe, Devon. This pass is divided out into pools. Salmon have been seen nine miles up the river; they must have come up the pass. Further alterations, founded on experience, will be made in it during the summer. I am happy to hear that it is proposed to open up the weirs on the Axe; I have already twice-reported on these. The most formidable is the Axminster town weir. Should any attempts be made to pass it, I consider the system of going round should be adopted. When on the spot I planned out the ground and staked out the places where the pools should be cut into the earth, and afterwards lined with brick or cement.

I am sorry to report that nothing has been done to the weirs on the river Nidd in Yorkshire; the lowest is Kirk Hamerton, the next Hunsingore, the next Goldsborough, Scotton Mill, and Knaresborough Town Weir.

The value of the milling property on this river is considerable; nevertheless, I trust that in time these weirs may be all made passable for salmon without injury to the milling power.

I have also examined the weirs on the river Kent, and have given the Board of Conservators designs to make them passable. Though at first sight almost insurmountable, there is no reason why the natural conformation of the rocks should not be utilized so as to form a system of pools.

In my museum at South Kensington will be found a collection of models and photographs of salmon ladders. There are scarcely any two alike, as I wish it to be understood that each weir requires special treatment. I shall be happy to lend any one of these models to any gentleman who wishes to erect a new pass or improve an old one.

I cannot conclude these observations without remarking that it is important to recollect that when mills were first put up, they did *not* work day and night. The proprietors of fisheries living above them did not therefore object so very much to their erection, because as the mill did not work in the night there was practically a close time and a passage given for the fish once every 24 hours. Now, the mills generally work day and night, and often pond up the water on every possible occasion, Sundays as well as week days. The ascending fish now, therefore, lose their former nightly close time every 24 hours, and the upper proprietors do not of course get them.

In former times the upper proprietors did not oppose the erection of mills. It is now too late to do so, as the legal rights of the millers are in most cases fully established.

GRATINGS.

A question has been raised as regards the action of the grating at Abertanat. The miller complains that the grating interferes with the supply of water to his wheel. The water running through this grating not only feeds the Shropshire Union Canal, but also turns the wheel of the mill. When the water was taken for the supply of the canal, the mill-leat was considerably widened, so as to give sufficient water for both purposes. Upon examination the miller informed me that there was plenty of water for his wheel except in "leaf time," that is, from the middle of October to the end of December; the grating does not interfere with his milling power at other times. This grating, which acts very well, has been approved under section 13, and therefore it cannot be removed. There is evidence that the mill power has been increased, and the water is used for irrigation.

CLOSE SEASONS.

Whereas the preamble of the Act of 1861 sets forth that, "for the purpose of increasing the supply of salmon," it is expedient to amend the laws relating to fisheries of salmon in England, &c., it becomes the special duty of my colleague and myself ever to keep this point before our eyes, and to reduce all salmon questions to the measure of the above standard.

In so doing two questions arise, first, that of the natural history of the fish itself, its times of migration, nidification, &c.; and, second, the question of policy, *i.e.*, how a floating property of great value, which is found at one time in a public fishery, at another in a private fishery, may be distributed so as to give a proper share to all concerned.

It was formerly supposed that rivers might be made earlier, *i.e.*, that fish would ascend them at an earlier period than is their natural wont, if protection was rigidly carried out. Experience has proved both in England, Wales, and Scotland that this idea was false and delusive, and that in spite of Acts of Parliament the salmon still retain their old habits, and duly observe their proper times of migration as appointed by Nature. These facts having been now substantiated beyond all possible doubt,—many former sceptics having now not a word to say against the facts,—it becomes a matter of the

utmost importance so to arrange the legal close seasons of various rivers for the future that the crops of each river as they become ripe shall successively come into the market as food for the public.

The earliest river in Europe is the Rhine. We find salmon running up the river in the months of November, December, and January. These are in reality "spring fish," and November and December in this instance must be considered as the spring.

The next earliest is the Tay, and I feel convinced and certain that many fine clean fish run up Tay in November, December, and January. In fact they accumulate in Loch Tay, a quiet resting place for them, and afford excellent sport for the angler.

These Rhine and Tay fish will, I feel sure, from anatomical examination, not spawn till the following autumn or early winter, *i.e.*, they will spend nearly a whole year from November, say 1871, to November 1872 in fresh waters, deteriorating every day in quality and condition. These early fish, therefore, ought to be killed for the market, if the question of policy did not intervene, as it may and often does.

If we examine the other side of the question, we shall find many rivers that are exceedingly late rivers. The spring fish begin to run up some rivers not before May, up some rivers again not till even later. The natural conditions of floods and temperature, of course, have very great effect on these migrations, but each river nevertheless has its season affected by the influences of latitude, longitude, climate, &c., which affect the fish world quite as much as the vegetable world.

It would seem, therefore, that the seasons of rivers come one after the other in due order and succession. This being the case, the law should be made so elastic that poor local fishermen may always reap their fish harvest when it becomes ripe, while at the same time the public may be benefited.

I would, therefore, propose that, for the future, English and Welsh rivers should be divided into groups according to their seasons. We have a precedent for this in the Scotch Salmon Fishery Act, where, by Schedule C., rivers are divided into three groups.

This enactment, as a rule, works well, but there are many rivers now in an early group that would like to be transferred to the later group.

I make bold to say, from personal knowledge, that if the close seasons are *not* altered according to the seasons, a great change for the worse will come over the general question of salmon fisheries. Before the Acts of 1861-65, the fishermen netted the fish in late rivers during September and October. They have for years past been deprived of what they consider their rights to fish; and if their netting time is not extended they will, I fear, become discontented, and lose that consideration for the law which in most cases (the Dee excepted) they have hitherto honourably observed. I cannot for a moment allow it to be supposed that under existing circumstances netting can even be prolonged into October. The last day of September is quite late enough for our latest river. At present the 15th day of September is late enough for many of our late rivers.

As regards rod fishing, I consider that in many cases angling may be fairly allowed in the month of November. Rods will never do any practical harm to the stock of the fish, as the instinct of the fish is matched against the intelligence of man, in many cases the former gaining the victory; whereas in the case of net fishing the fish has no option but to be caught whether he will or no.

In all cases where angling is allowed in November, strict regulations must be laid down as regards the use of the gaff and returning female fish to the water. I would much rather see a party of anglers on the bank of the river in the month of November with their rods, than a party of poachers with their gaffs, for I believe the rule is "anglers off, poachers on."

In increasing the stock in a river, everything depends upon the good-will of the upper proprietors, and they must be conciliated somehow. This may be brought about according to the circumstances of the locality, either by increasing the weekly close time, or allowing the angling season to be prolonged, or by other means. It is ridiculous and foolhardy on the part of the net fishermen in the estuary and lower portions of the river to think that they can defy and laugh at the upper proprietors. It is but just and fair that the breeders of the fish should have their proper allowance of the natural products of their river; and if the lower proprietors are foolish enough not to see the necessity of this arrangement being carried out, it is high time that the law should intervene and adjust the difference, so that both upper and lower should ultimately be benefited both in income and sport, whilst the general supply of salmon in tons to the public market would be greatly augmented and the price lowered, so as to bring this nutritious article of food within the reach of a large class of persons to whom it is at present a forbidden luxury.

An idea, I find, is gradually gaining ground in many parts of the country that angling for salmon smolts should be made legal. Our fisheries are not as yet in a condition to bear this great pull upon their productive powers.

UNCLEAN AND UNSEASONABLE SALMON.

It may be recollected that last year I reported the seizure of 330 fish at Billingsgate, the weight of which was over 4,000 lbs. in weight. It so happens that in the spring of 1872 the rivers have, for the most part, been in flood at the time the kelts were descending to the sea, so that vast numbers of these have escaped the poachers and will tend considerably to benefit the stock as well as the size of fish in future years; nevertheless, the traffic in unclean fish from Ireland to the Continent has again been attempted. On the 7th day of February I was fortunately able, with the assistance of and the utilization of the plenary power of the officers of the Fishmongers' Company, to detain, open, and seize three boxes of salmon which were on the road to the Continent. These boxes contained altogether fifty-four fish; I not only carefully examined, but dissected every one of these fish; they consisted of ten cocks and forty-four hens, in every state of tenuity, and abject appearance.

Last year many of the fish that were seized had not spawned; this year, on the contrary, they had all spawned, the ovaries in a few instances containing a few eggs, with a number of eggs also lying loose in the abdomen. Most of these fish, I am sorry to say, presented hideous wounds caused by the barbarous gaff or stroke-haul, from which it has been suggested that these had been caught with the rod. The wounds, however, appeared more like the handywork of the poachers than by the angler. Among the fish were some that had evidently been picked out of the river dead, as their flesh was in a somewhat advanced stage of decomposition. The sight of this heap of kelts, which were intended for human food, was quite enough to make any true lover of salmon cultivation feel much grieved, and at the same time to make them feel thankful that the Act brought in by Mr. Malcolm, Mr. C. Hambro, and Mr. D. Cameron, which extends protection of the law to kelts up to the 30th of April, had proved of such great practical service.

On the 9th of February, two more boxes containing thirty fish of a similar character were seized; they all came from the Cork district, and the names of the senders are known.

My colleague and myself have sent over all particulars of this matter to the Inspectors of Fisheries in Ireland. We also sent samples of the fish themselves, and the matter is now in their hands.

MUSEUM OF FISH CULTURE AT SOUTH KENSINGTON.

Anxious that the public in general should become interested by ocular examination in the science of fish culture, I have made every effort to increase the number of specimens, casts, &c. in my Museum of Economic Fish Culture, which I have the honour to be allowed to place in their galleries by the Lords Committee of the Council of Education and authorities of the South Kensington Museum.

During the Exhibition of 1871 many thousands of persons have passed through my museum, and I have good reason to believe that a considerable impulse has thereby been given to fish culture in general and to salmon culture in particular. Considerable numbers of salmon, common trout, bull trout, char, *Salmo Fontinalis*, or American brook trout, &c., have been hatched out and are now hatching out. The latter fish, the *Salmo Fontinalis*, has thriven exceedingly well. I have several of these beautiful fish over two pounds in weight now alive in the tanks. It may be therefore said that they have been fairly established in this country, and I am glad I have brought it about. These fish were the produce of some ova presented to me by Mr. Seth Green, the eminent American pisciculturist. Three years ago I sent some of the young American brook trout to the Conway, and I am happy to hear on good authority that one of these fish was caught with the rod last season in the Conway. A salmon of peculiar shape and scales has also been caught in the Conway. The local fishermen say it is not the common salmon of the river caught in the Conway or any other Welsh river. The probability therefore is that it is a Rhine salmon, an adult specimen of some of the fry which I sent up to the Conway, and which were born from eggs presented to me by the French Government establishment at Huningue. These two facts, though not of great import in themselves, demonstrate that salmon and trout culture by artificial means may often prove to be an useful adjunct to the watching and preservation of the fish on the natural spawning beds, and that the crossing of breeds of salmon from different rivers would also be of great advantage. I am glad to hear that fish breeding on a considerable scale has been commenced by Mr. Parnaby, of Trout Dale

Fishery, Keswick, who has taken a journey to Canada with the view of making arrangements for the import and acclimatization in this country of *Salmo Fontinalis* and some of the other more valuable kinds of fresh-water fish of American lakes and rivers. The American Government of late have done much for the encouragement of fish breeding by artificial means and distributing fry and ova throughout the country.

My colleague and myself are making arrangements for experimental netting and the marking of young and old fish in various rivers throughout the country, in order to get as much insight as possible into the habits, migrations, growth, &c. of salmonidæ. We are in direct communication with the Usk Board on this point. Mr. Mostyn Owen has given me a good case of a marked fish having been caught. When it was marked it was under 7 lbs.; eight years afterwards, when it was re-captured, it weighed 28 lbs.

Although this Report directly refers to the progress and general condition of English and Welsh fisheries, yet anything which will increase the supply of salmon in the public markets should receive the attention of those to whose care the interests of salmon fisheries are especially consigned. Considerable numbers of magnificent salmon are annually sent over from the Dutch fisheries of the Rhine. The management of this, one of the largest of European salmon-bearing rivers, is in a somewhat confused state, owing to the non-agreement of the riparian proprietors, who in this instance are not represented by individuals or corporations, but by nations. The difficulty therefore of arranging unity of action along the vast distance of 400 miles is very great. The matter, however, has been taken in hand by the German Fishery Society, the "Deutscher Fischerei Verein," at Berlin, and by the Fisheries Society of Dortrecht. I have had the honour to be elected Corresponding Member of both these societies, and have endeavoured to give my best advice and co-operation in developing the valuable fisheries of the Rhine, the products of which form such an important part of the supply of salmon to the English market.

POLLUTIONS.

As I have stated in previous reports on both English and Scotch Salmon Fisheries, the question of pollution of rivers is one that can hardly be met directly by a Salmon Act. Nevertheless, I have made it my earnest duty to pay attention to the subject, and everywhere endeavour, both at meetings and by my writings and lectures, to insist upon the idea that the question of pollution of rivers is not so much that of supply of fish, as it is that of public health. Pollutions may be divided broadly into three classes:

Firstly. Those from town sewage.

Secondly. Those from mines where mineral matter and powdered rock is mixed up with the water.

Thirdly. Pollutions from chemical works, when the manufacturers send into the river all the waste material which they cannot sell, as the cheapest mode of getting rid of it; and this without the slightest regard to the health of their neighbours or of the injury done to the fisheries.

As regards town sewage, I am glad to say that towns, one after another, are beginning to see the folly of not utilizing their sewage. I have carefully and minutely examined and reported upon the utilization of the sewage of Eton by "the separate system" as first brought out by Mr. Menzies, deputy surveyor of Windsor Great Park. This system appears to me to be the right one, both for human beings and for the fish. I am glad to hear that the sewage of Oxford will be shortly kept out of the Thames. I have reported on this also, and am in communication with the Very Rev. the Dean of Christ Church and Mr. Alderman Sadler on the subject. The state of the river upon which the members of the University take their daily pastime in rowing is perfectly horrible, and I wonder that the fathers of the Undergraduates, as representing the future strength and intellect of this country, do not take up the case and insist that this evil shall no longer be tolerated, but that it should be done away with *at once*.*

The whole of the town sewage of Shrewsbury goes into the river Severn, not by one culvert, but by many exits of various sizes. The opinion of Mr. Hughes, of Shrewsbury,

* Those interested in sewage matters should examine the turbine wheel lately erected at the lock at Old Windsor on the Thames; this wheel will pump water day and night over the royal property, through no less than nine miles of four-inch piping. This turbine wheel will also compress air which will pump the sewage from the Castle, Frogmore, and other royal property which will be drained on the separate system on to land. The distance from the turbine wheel to the pump is no less than 450 yards. The ordinary way is to bring the pumps to the exit of the sewer. By the above plan of compressed air the power can be conveyed to a great distance. This ingenious plan is due to Mr. Menzies, deputy surveyor of Windsor Park.

one of the Conservators of the Severn Board : this town sewage is not injurious to the fish, as some of the best trout in the district are caught round the town.

In the neighbourhood of Shrewsbury, at "Castle Fields," there is a chemical work which I feel convinced must do injury to the river.

A catch pit about 10 feet square has been made to receive the worst of the pollution, it contained a stinking fluid with a highly iridescent scum at the top, indicating tar and the refuse of tar.

From the catch pit the refuse runs down a ditch of considerable length into the river. Upon examining the exit I found the bushes encrusted with a soft pitch, like highly offensive material, while drops of fluid, tasting strongly of tar, were falling into the river; the mud in the river was also very offensive when stirred up. A second catch pit should be made, this could be done at a small expense, and small weirs built across the old ditch, which should be stuffed with loose faggots, so as to stop the pollution as much as possible.

The pollution running down the ditch must seriously affect the salmon draft at "Rowlands Oak," not very far below the cast of the ditch. The mischief is, however, not so bad as it used to be; on one occasion I was told that salmon and trout caught 14 miles down tasted strongly of tar.

The Gloucester sewage continues still to pollute the Severn in a terrible way; and the new weir just built at Llantony, below the exit of the sewer, will not tend to improve matters. During the past year two hogsheads of creosote were dropped into the river by accident, and could not be recovered. This seriously affected the fish running up, and also the catches of the nets below. An oily material is often seen floating on the river when it is low; this comes from an old sewer near the gasworks: and, possibly, comes from some leak in a pipe connected with the gasworks.

High up on the Rhymney, in South Wales, there are some chemical works. Though the owner denies that anything deleterious goes into the river, I have received abundance of evidence that noxious material does go into the stream. A little boy was lately made sick from drinking some of the water. A tar-like material is often seen floating on the top of the water, and fish caught in the stream some miles down are reported to have a strong chemical taste in their flesh. The pollutions on the Rhymney are so bad that the caddis-worms, water-crickets, bull-heads, have all disappeared; even the ducks, snipes, and water-ousels are getting very scarce. Under these circumstances it is natural that the fish should also suffer.

I have examined Mr. Woodruff's works at Machen, on the banks of the Rhymney. The water in the catch-pits tasted strongly of acid, and fish shortly died when placed in it. The brook which takes its water from these works was as red as blood; and the overhanging branches and plants in the river thickly coated with a red mud. The manufacturer uses some of his acid to make copperas, but no doubt a good deal of it goes into the river. He states, there are as many fish as ever, and that in his opinion sulphuric acid "acts as a tonic to the fish."*

As regards the pollution of rivers by mines, I have (last year) paid special attention to those proceeding from lead mines. The rivers in Wales suffer especially from this cause. It must be recollected that barely a particle of lead ore itself is allowed to go into the river, the miners using every precaution to catch it; that which is let in the river is the natural rock in a state of very fine powder: this often contains a mineral matter soluble in water, and in reference to this point, I beg to publish a very valuable Report from Professor Church, of Cirencester. In regard to the keeping back of the sulphide of lead and mundic I am in communication with an eminent chemist, Dr. Noad, of St. George's Hospital.

"I have carefully examined the water from the Lauder, and compared it with the water of the Dovey itself (above the works, being No. 3 of the samples sent by Mr. Bell a short time back).

"The Lauder water contains much suspended matter, and of this a large part is galena or sulphide of lead, a part of it being iron pyrites, and the remainder insoluble, silicious, or slaty matter. The water when filtered so as to be quite clear is distinctly and permanently acid owing to the presence of sulphuric acid.† This acid owes its origin to the oxidation of iron pyrites (mundic), which doubtless accompanies the bad ore and is a very widely diffused mineral, particularly in the slates of Wales and Cornwall. The fact that the Dovey water

* It ought to be better known than it is, that the copperas, green sulphate of iron, is an admirable thing for purifying water from offensive organic matter by precipitation. Mr. Bartlett, the Superintendent of the Zoological Gardens, uses it as a disinfectant to the hippopotamus pond, and finds it answers admirably.

† I have made and annotated several experiments on the effects of poisons on fish. I find that water so slightly diluted with sulphuric acid as hardly to redden litmus-paper or taste to the tongue, will sicken a fish and kill it in a few minutes. The purer the water in a river (as Dr. Noad remarks) the worse for the fish, as should there be carbonate of lime in the water the sulphuric acid becomes inert. I also find one grain to the gallon of water of chloride of lime speedily fatal to the fish; creosote is also most deadly. From my experiments I conclude that the question of rendering pollutions from mines and factories innocuous to fish may be capable of solution.

contains less than one grain of sulphate of lime per gallon, and the water from the works nearly nine grains, affords a further proof of the great change which the mining refuse exerts upon the water in the presence of air.

"I attribute the death of the fish in the river to the presence of acid in the waste water of the works, and to the deprivation of the natural oxygen of the water, caused by the finely divided iron pyrites absorbing it, for oxygen dissolved in water is as necessary to the respiration of fish as the oxygen of the atmosphere is to that of air-breathing animals.

Analysis	at Lauder.	Dovey
"Total residue (per gallon in grains) of dissolved matter - - - - -	14.0	3.15
"Total residue of suspended matter - - - - -	5123.5	none.
"Sulphate of lime in residue of dissolved matter - - - - -	8.24	.86
"Carbonate of lime - - - - -	none.	considerable.
"The suspended matter in the water from the Lauder contained 3640.3 grains (per gallon of water) of silica and insoluble silicates, the remainder of it being mainly galena, with some iron pyrites.		
" (Signed) A. H. CHURCH, M.A., F.C.S.		
"Professor of Chemistry."		

In cases however where the powdered rock is placed into the river, it may in nearly every case be stopped by means of catch pits, especially if they be made on the alternate system, *i.e.*, that the water in one of the pits should be allowed to deposit its sediment while the other is receiving the water from the mine. From experiments made I find the water will clear itself in a very few hours, if allowed to remain quiet. If it remains, however, continually agitated the minute particles of dust take a long time to settle. I have made a model of this double system of catch pits in plaster and wood, and shall be very happy to send it to any mineowner who will put the system in operation. I have been favoured with the following report, and with plans of the system adopted in Prussia for preventing the pollution of rivers by lead mines. I shall be pleased to forward the plan to any person who will kindly adopt it.

"In order to prevent nuisance to rivers and brooks, as well as to prevent loss by metal (of which the Government receives $\frac{1}{10}$), proper plans of any intended dressing works have to be submitted to the local authorities, the project is then for six weeks published in the local papers, and parties interested in rivers and brooks are invited to come and inspect the plans, &c. Such plans have to show a system of clearing ponds, and the Government Inspector has to certify that they suffice to clear the water perfectly before it escapes.

"It is also the duty of the Government Inspector (it was my lot once) to visit the dressing departments in his district at least once a month to satisfy himself, and record in his manual that the water escapes perfectly clear. Thus, you will find that all the rivers in Sugerland, Nassau, &c., are full of fish. The river which flows through "Ems," for instance, receives all the water from the dressing works at Holtz-appel and other places, and still is absolutely full of fish.

"If dressers in Cornwall and Cardigan would only listen to reason, and make the necessary arrangements for catching the valuable slimes from the dressing works, it would certainly be the means of making many mines pay, which are at present at a stand still.

"The plan herewith is a drawing of the method approved by the Prussian Government as effectual, and the following is a description of its working:

"The water from the dressing department enters by "A," little pieces of planks are inserted by "i," and this system of Lauders is continually cleaned out during the dressing process, so that there are no mineral shimes passing by "X."

"The tanks "T" are made of brickwork, and require to be cleaned out once a month, the one system being cleaned while the other is working.

"The system from A to X is generally made of half-inch deal, beechwood being preferable, and, according to the flow of water, should be one foot deep, and from 15 to 20 inches wide and quite horizontal. The water in this system may move with a velocity of eight inches per second, or less, and taking the quantity of water coming from the dressing floor into account, the required dimensions can thus be ascertained. Little planks have to be put in by "i" to reach within three inches of the surface, and the system has to be constantly cleaned during the dressing. All the slimes worth recovering are precipitated between A and X, but if valuable ores such as gold and silver ores are dressed, it might be necessary to provide a coarse flannel filter by "i." The tanks T might be made of brickwork, and the partitions P should be strong enough, and faced with deal, so as to allow moveable rails or other roadways to be laid across. When the tanks are cleaned four feet would be about the best depth for the tanks; it would enable a man to empty the slimes into a cart or train when cleaning out the tanks. The water escapes clear of mineral matter B, but should it contain acid this should be neutralized, and could be turned to account as manure if lime was employed as precipitating agent."

The refuse from mines also affect animal life; horses and cows, ducks and geese, have been known to have been killed by them.

The Rev. Augustus Morgan used to cast gravel from the river Rhymney into his garden. The fowls, pigeons, and small birds were frequently found lying about dead and poisoned. In November I received two live ducks from this gentleman, both suffering under paralysis from eating this gravel; they shortly died, and I made a post-mortem of them; the cause of death was probably sulphate of barytes; it consists of 40 parts sulphuric acid and 76 barytes. Sulphate of barytes is what is called accumulative poison, *i.e.* that a small portion every day would soon produce effect.

As regards the *débris* and mud of crushed rock, I am happy to say that some economical use can be made of it. I am informed by Mr. George, Superintendent of the Upper Severn, that in the Van Mines the slime from the catch-pits is being made into bricks, by being mixed with sand, and burnt. They make very good bricks, and are used on the

premises. This idea is most valuable, and all lead mine owners should adopt it. I have myself made several bricks with *débris* of lead mines and Portland cement, or Roman cement will do. I shall be glad to send samples of these bricks to any person who applies for them.

I have been informed by the foreman of the new works at the Old Windsor lock, on the Thames, that the cement which sets best under water is Burham Company's cement, Burham Wharf, Belvedere Road, Lambeth. The proportions for water work are one cement to four of washed gravel or refuse from lead mines; for other work, one cement to eight or ten of washed gravel or lead refuse; this composition sets like solid rock. In laying foundations for salmon passes, &c., made with this cement, the concrete should be laid down in bags, as the bags fit one into the other; the concrete blocks will not do this.

I am pleased to report that I have interested one of the most influential landed proprietors in North Wales in the desirability of keeping pollutions from lead mines out of the river; and I have no doubt considerable good will come of this.

As regards the pollution of salmon rivers by chemicals, I beg to report that the pollutions from the various chemical works at and about Flint, below Chester, on the Dee, continue very bad. I understand, on good authority, that the pollutions from one of these works are now diverted into a public sewer, so that detection and subsequent prosecution *quoad* salmon fisheries becomes more difficult. The stuff that flows out of these works into the Dee is so strong that it is said to blister the paint on the bottoms of the boats in the river, and will injure and burn up the leather shoes of those who walk on the foreshore near the place where it comes out.

I have attended a meeting of an Anti-pollution Society now established at Chester. This society commenced its work under high auspices. The Lord Bishop of the Diocese was in the chair, and the Rev. Canon Kingsley and local authorities spoke strongly against the present system of polluting public water, and the imperative necessity for putting a stop to the public nuisance. The Society has already instituted prosecutions. This last prosecution has, unfortunately, failed; for details of this case, I would refer to the Report of my colleague.

A very destructive mode of killing fish has lately been going on in the Upper Severn, and also, I believe, in the Usk, where the plan is called using the "white net." It consists simply of putting lime into the pools. Mr. Donelly, Chief Constable at New Town, Montgomeryshire, tells me the practice is very common in that neighbourhood.

The following rivers report that new lead mines have been opened during the year. Dovey, lead mine on the Mawddach, catch pits have been made; the Wye, new mine on the Elan; Fowey, Tremaddock mine in St. Neot Valley, and at two other mines catch-pits have been made. Besides these, old mines are being reworked at Christow on the Teign, and on the Towy; at the latter, catch pits have been made.

A paper mill on the Kent, print works at Barrow on the Ribble, paper works and gas works on the Eden, petroleum works on the Dee, china clay works on the Plym, manganese works on the Lyd, a tributary of the Tamar, chemical works on the Trent, and a tannery on the Usk, have been erected or re-opened during the last year.

The Boards of the following rivers report that they have taken steps, in many cases with great success, to prevent the various pollutions running into the rivers: Kent, Eden, Dee, Conway, Dovey, Towy, Usk, Severn, Fowey, and Wharfe.

LEGISLATION.

In order to give a *résumé* of the legislation required for the improvement and development of the salmon fisheries, I shall now attempt to classify the clauses of the Acts of 1861 and 1865, according to their importance.

In taking, therefore, a general view of the Acts of 1861-5, the clauses may, I think, be catalogued under several heads.

In my introductory remarks I have stated that the great majority of rivers ascribe the increase of fish to Protection and Preservation. In any new Act, therefore, attention should be firstly directed to improving the provisions as regards the fish themselves. These include, 1st, disturbing fish on spawning beds, Section 16, Act 1861; 2nd, using roe as bait, Section 9, Act 1861; 3rd, taking roe for artificial propagation, Section 60, Act 1865; 4th, protection of the young of salmon, Section 15, Act 1861; 5th, unclean and unseasonable fish, Section 14, Act 1861; 6th, Gratings, Section 13, Act 1861; 7th, selling fish in close time, Section 19, Act 1861; 8th, export of fish, Section 65, Act 1865; 9th, protection of trout in salmon fishery districts, Section 64, Act 1865.*

* The words "and char" should be introduced into this Section.

The group of clauses more immediately following the above, are those relating to Preservation of the fish, namely, 10th, provision as to lights and spears, Clause 8, Act 1861; 11th, warrant to enter suspected places, Clause 34, Act 1861; 12th, power of water bailiff for protection of fisheries, Clause 30, Act 1865; 13th, entry of water-bailiff on land, Clause 31, Act 1865; 14th, award of imprisonment with hard labour instead of penalty, Clause 56, Act 1865; 15th, minimum penalties, Clause 57, Act 1865; 16th, appeals to quarter session in case of summary conviction, Clause 66, Act 1865.

I shall now proceed to comment upon the above two groups of clauses. The following require no alteration:—Using roe as bait; taking roe for artificial propagation. To strengthen the clauses relating to the above thirteen heads, amendments to the following effect are urgently called for. Water-bailiffs should be given power—

(a.) To examine without interruption weirs, dams, fishing weirs, fishing mill dams, fixed engines, obstructions, salmon ladders or passes, and gratings to mill leats.

(b.) Freely to traverse without let or hindrance the banks of salmon rivers throughout the year; and if this be thought too great a concession, at least during the months when the fish are about to spawn, are spawning, or have just done spawning. This period should include October, November, December, January, February, March, April.

(c.) To search steamers,* boats, barges,† coracles, live fish boxes, carts, vans, trucks, or any sort of vehicle likely to convey fish. Also to search the person of any one suspected of having salmon unlawfully obtained, or of having in his or her possession any spear, gaff, stroke haul, snap, or other poaching implement (see Poaching Prevention Act).

The giving extra powers of protection and preservation seems to me to be the root and foundation of a successful salmon fishery, for unless the seed is sown, how will it be possible to reap the crop? I have always endeavoured to impress upon water-bailiffs the importance of attending to their duties, especially in the winter time; and whenever opportunity occurs, I endeavour to instruct them on matters of detail apparently insignificant, but really of the highest importance. My colleague, I find, has tabulated in the Report (see Appendix No. VII.), the number of watchers employed throughout the country, as far as statistics can be gathered. It is desirable that in future years that this number should be doubled, especially during the spawning time.

In order to enhance the authority of the actual guardians of the fish, I advise that in all cases where practicable officers of the county police should be told off for this duty, and be paid by the Board of Conservators. That if men (not disciplined policemen be employed), that the water-bailiffs should always carry with them their warrant of appointment duly signed and delivered, and that, better still, that they should wear uniform. Water-bailiffs should also be required to fill up weekly returns of duties performed, observations as to the state of the river, running of fish, capture of fish, construction of gratings, passes, spawning beds, unclean fish, &c., so that the Conservators would have a regular filed series of reports of the district under their charge throughout the year. This plan is now partially carried out by the Usk Board.

Thirdly, preservation may be said to be greatly in the hands of local magistrates, for if after the water-bailiffs have taken all the pains they can to summons an offender against the Salmon Act, the magistrates inflict an absurdly small fine, the officers of Boards of Conservators feel that their efforts are not properly supported by the higher authorities, while the delinquent is apt to boast of a triumph over those who he considers his enemies, and the law itself is brought into disrepute.

I have no hesitation, therefore, in advising that in any future Act, whether English or Scotch, minimum penalties should be laid down by the Legislature. If this were done a most serious blow would be inflicted upon poaching throughout the country. Poachers are, as a rule, an idle set of fellows, who, if they cannot poach salmon, will rob poultry or otherwise injure property. In the interests, therefore, of suppressing this class of persons, much moral good will be effected.

For the support of the water-bailiffs and the better protection of the fish, it is desirable that the provisions of the 25th and 26th of Victoria, cap. 114, that is, "The Poaching Prevention Act," should be made applicable to fresh-water fish. In order to substantiate this statement, which I have also mentioned in my report on future legislation for Scotland, I beg to annex a valuable statement as made to the Eden Board of Conservators by Mr. Dunne, Chief Constable of Cumberland and Westmoreland.

* This is required, as kelts have been exported from Southampton to Jersey.

† The Dee fishermen catch fish in the close season, and as they cannot land them at all, they sell them to barges, &c., that anchor in the river and in the estuary of the Mersey.

"Chief Constable's Office, Carlisle,

"30th December 1871.

"GENTLEMEN,

"With regard to the question which was discussed at your last meeting, as to the necessity of extending the provisions of the 25th and 26th Vict., cap. 114, "The Poaching Prevention Act," to fresh-water fish, I have the honour to report for your information that fish poaching is carried on to a great extent in the rivers Eden, Petteril, Eamont, Irthing, Caldew, Derwent, Ehen, Calder, Lune, and their tributaries, also Windermere and other lakes, in these counties. Gangs of men, who mainly make a living by poaching, go out in the night for the purpose of netting with the shackle, or other nets in these rivers. The police have frequently intercepted such persons on their return home with large quantities of fish in their possession. In one of these instances, which occurred at Penrith, the police stopped some notorious poachers on their way home, and on examining a sack in their possession it was found to contain about seven stone of freshly-killed trout, and about 25 brandlings and some smelts. The poachers refused to give any account of how they became possessed of the fish; the police thereupon seized it. The parties in whose possession it was found were summoned for unlawfully having the young of salmon in their possession. They were convicted under the 15th section of the 24th and 25th Vict., cap. 109, and fined 3*l.* each. The whole of the fish seized was ordered to be forfeited. Subsequently the poachers brought an action in the County Court against the police officer who seized the fish for the recovery of 2*l.* 14*s.*, the value of the trout seized. A verdict was given against the police for the full amount claimed, in addition to the whole of the costs in the case, which amounted to 13*l.* 2*s.* 9*d.* In this case the police, therefore, had to pay 15*l.* 6*s.* 9*d.* for seizing the trout found in the possession of the poachers, which was in the sack with the brandlings and smelts. In another instance a police officer saw men netting with a shackle net in the river Eden, near Wetheral, in the middle of the night. On the police officer attempting to search them, they knocked him down, brutally assaulted him, and threw him into the river in an insensible condition, where they left him, and had it not been for a great physical effort on his part he in all probability would have been drowned. Two river watchers, while attempting to capture men found illegally fishing in the night, have also been murdered by fish poachers. One was murdered in the Eden, the other in the Derwent, in this county. Since the case has been heard in the Penrith County Court it has become generally known that poachers are not legally bound to account for the possession of trout, char, &c., consequently fish poaching has greatly increased, and the destruction of the young of salmon by the shackle and other nets used by the poachers has been very great. I understand that the poachers, previously to returning home, examine the fish they catch, and either conceal or destroy any of the young of salmon that may be among it, so as to avoid the risk of its being found in their possession, and the consequence of being summoned before the magistrates. Unless poachers are, therefore, detected in the actual commission of fish poaching it is almost impossible to now obtain sufficient evidence to justify their being brought before the magistrates and convicted. Instances have recently occurred of the police stopping poachers on their way home in the middle of the night or early in the morning, and on examining them quantities of trout, char, and other fresh-water fish were found in their possession; and although there could be no doubt that such fish had been illegally taken, in the present state of the law, the police had no power to seize the fish found under these circumstances, and to summon before the magistrates the persons in whose possession it was found.

"The Poaching Prevention Act has operated most beneficially in breaking up gangs of notorious poachers; and, indirectly, has had the effect of preventing various felonies and many serious crimes, for it is a well-known fact that gangs of professional poachers made their livelihood by a course of crime, and when failing to get game they invariably stole poultry, committed a burglary, or some other offence; but since the passing of this Act, such crimes are the exception instead of the rule.

"I am confident that if the provisions of the Poaching Prevention Act were also extended to trout, char, and other fresh-water fish, the effect would be to break up numerous gangs of fish poachers, while it would also add greatly to the protection of salmon, and the young of salmon. I am strongly of opinion that the law should require the persons in whose possession the fish was found, under the circumstances I have detailed, to account for its possession, and that failing to show to the satisfaction of the magistrates that it was honestly procured, such persons should be liable to a fine, with forfeiture of fish, &c., similar to what is provided touching game under the Poaching Prevention Act.

"I have, &c.,

"J. DUNNE,

"Chief Constable of the Counties of Cumberland and Westmorland.

"To the Board of Conservators of the Eden Fishery District, Carlisle."

The next great enemies to the migratory fish are the feeders of canals and mill leats. The Dee attributes much of the increase of salmon to the presence of a grating at the entrance of the Shropshire Union Canal, a few miles below Bala Lake. I have again carefully examined this grating, and it appears to me to be in perfect working order, a model for gratings for other localities. Before the grating was erected, and when it was in an imperfect condition, the young salmon passed from the Dee into the canal and were lost.

In corroboration of this, I may mention that before the grating was put up connected with the canal weir at Newton on the Usk, when the water was let out from the canal, many kelts and thousands of salmon pink were found jumping on the grass; all this waste of life is now obviated by the grating at the head of the canal leat.

We require power to fix gratings so as to prevent the destruction of salmon fry and kelts at the head of *all* mill leats and watercourses, whether natural or artificial, which may imperil the safety of the descending fish. The word grating to include any device such as a revolving wheel, which will effect this purpose. The grating should be placed at the intake of these channels from January to June; a grating should be fixed at the outlet of these channels from June to January. In the case of *canals* and *waterworks* the gratings should remain all the year round. The grating clause should also apply to carriers or irrigating ditches, which do so much mischief in the water meadows in Hampshire. Conservators should have power to block fish out from any river or tributary,

where, on account of pollutions, or the too great prevalence of poachers, fish are liable to be poisoned or be captured in illegal ways. See Report on Seiont and Conway. The Festiniog river in the Dovey district would also be benefited by such a clause.

Conservators should also have power to dam up lakes or other reservoirs so as to create an artificial spate when desirable.

I feel convinced that if these grating clauses were carried that a vast number of fish would be saved to the rivers which are now entirely lost through the want of very simple and inexpensive precautions.

Eel baskets should come under the regulation of the Boards of Conservators; eel baskets with their mouths set down stream, baited with bait and placed singly in the bed of a river will do no mischief, but eel baskets placed in a row across the river as the so called eel-bucks on the Thames or connected with weirs or mill wheels should be entirely removed from January to June. Eels are not descending the river at this period of the year, whereas salmon fry and kelts are descending. The eel-bucks, weirs, &c., may be put in working order again from July to December, when the eels are coming down and the salmon are coming up; this is most important, and I trust will be carried into effect.

In fact no engine for taking *descending* fish should be permitted between January and June, inclusive.

CLOSE TIMES.

The destruction of eel fry in the Avon, Brue, and Parret still goes on; it is a shame that these little fish should be so wantonly destroyed. Power should also be given to Conservators to regulate fisheries other than for migratory salmonidæ. Much mischief is done in estuaries by men who pretend they are fishing for flounders; this is especially the case in the estuaries of the Dee, the Exe, the Canterbury Stour, &c. The fishing for sparlings or smelts (*Salmo Eperlanus*) should also be put under the regulations of the Boards of Conservators.

The present law, Section 19, Act 1861, is defective, inasmuch as to say that at present the sale of salmon is forbidden between the third of September and the second of February. By the 18th Section of the same Act, the Home Office has power to extend or vary the time for taking salmon in individual rivers. As matters now stand, supposing the Home Office to allow fishing to go on till the middle of September, the permission would be of no avail, as the clause immediately following renders it illegal to sell salmon in that month. I have said and written this very often before, but I think it right to repeat it in this place, as it is very important. I would prohibit the sale of all salmon after the end of September, except the magnificent Dutch salmon which come from the Rhine, and which generally make their first appearance in the market the first week in November; these fish are always accompanied by a certificate, and it would be not fair to the Dutch salmon proprietors or to the public that the sale of these fish should be prevented. The question of pickled salmon requires consideration. In certain parts of the country it is the habit to catch the salmon in the annual close time; it is immediately cut up and put into a tub with salt, and is then protected by the wording of the 19th Clause of the Act of 1861, "but this" section shall not apply to any person buying, selling, or exposing for sale, or having "in his possession for sale, salmon cured, pickled, or dried." Words should be put into this clause to the effect that salmon pickled must be proved to have been caught in the open time, as many people fish for salmon the whole season; they say they are fishing for flounders. Immediately a salmon is caught he is put into the pickle-tub, and then the present law will not touch the fishermen.

The practice of collecting dead and half-putrid fish from the rivers and selling them when disguised with salt is unfortunately very prevalent, but it would be much checked by a provision such as I now recommend, and the public health would be protected.

The next important group of clauses in the Salmon Acts are those relating to pollutions. Section 5, penalty on mixing poisonous substances in rivers, and two subsequent sections.

Recent events (see Report on the Dee) seem to show that this section is practically inoperative. The question of pollutions is generally the question which clashes with commercial interests or the municipal regulations of large towns. I am afraid, therefore, it is too large a question to be dealt with under Fishery Acts, though I should much like to see the pollution clause strengthened. Whereas there is a special Commission to inquire into the whole matter it would be perhaps advisable to leave the matter in their hands.

There are many points which come before my colleague and myself which do not exactly come under the notice of the Pollution Commissioners. Of these I have treated especially in my remarks on pollutions.

NETS AND FIXED ENGINES.

We now pass on to consider legislation as applied to instruments used for catching fish. The present clauses bearing on this subject are Section 10, Act 1861, penalty on using certain nets; Section 58, Act 1865, forfeiture of nets; Section 11, Act, 1861, fixed engines; Section 12, Act, 1861, fishing weirs and fishing mill dams; Sections 27 and 28, Act 1861, construction of free gaps; Section 29, Act 1861, regulation of boxes and cribs in fishing weirs and fishing mill dams; Section 30, Act 1861, construction of spur walls in fishing weirs or fishing mill dams; and the Sections in the Act of 1865 from 39 to 55 inclusive, relative to the duties and powers of the Special Commissioners. As regards Section 10, the use of nets, I am of opinion that the present regulation size of two inches from knot to knot as a minimum is not judicious. Boards of Conservators should have power, with the approval of the Secretary of State, to allow the fishermen to use nets according to the size and habits of the fish in the river. Thus, in many rivers, it is desirable that the mesh should be an inch and a half from knot to knot, to catch the sewin and other smaller salmonidæ. The hang nets on the Tyne also require regulation; for what that regulation should be, see my Report on the Tyne, pp. 18. There should be a maximum and minimum allowed for the mesh of the nets. Nets specified by their local names should be made legal or illegal in certain districts. The Perk or Horn nets, as used in Welsh rivers, require suppression or regulation. It is a question whether licensed nets should be labelled, but on the whole I think it best they should be so. Nets should not be allowed to be used at uncertain distances from the mouths of rivers, so as to afford a resting place for salmon coming in from the sea to the rivers. All these should be a matter of byelaw. Prescribed distances should be appointed, within which draft nets may be worked. It is desired by some that the use of draft nets in upper waters should be prohibited at night. This is a difficult question, as in many localities the fish cannot be caught in the day. It may, therefore, interfere with the rights of property. The question, I think, should be transferred into the byelaws, as so very much depends upon locality, legal rights, &c.

FIXED ENGINES.

Perhaps a new definition is required. I quite approve that contained in the Salmon Fisheries Bill, No. 2. Section 12, Act 1861, requires no alteration except in paragraph 2. It would be advisable to extend the distance of 50 yards, in which it is now illegal to fish, to 100 yards below or above a weir.

The clauses relating to the existence of fishing weirs, 27 to 30, do not require alteration.

WEIRS.

The next important group of Sections in the Acts of 1861 and 1865 are those relating to weirs; they are Section 25, Act 1861, fish passes to be attached to future dams; Clause 26, Act 1861, supply of water to fish passes. Alteration of fish passes, clause 32, Act 1865.

More power to render artificial dams less obstructive to fish is certainly required, but inasmuch as these obstructions are generally private property, and manufacturing interests depend upon their existence, the question becomes one which requires exceedingly delicate handling. The heroic cure for this evil is that the dam should be bought and pulled down. The most noticeable instance of this is the destruction of Bywell dam on the Tyne, Woodburn dam on the Reed, Trostrey weir on the Usk. The next most important dams which it is desirable to purchase and pull down are Dinsdale on the Tees, Warden dam on the South Tyne, Countess weir on the Exe, Axminster dam on the Axe, Bodmin weir on the Camel, and many others.

In the above instances, except Dinsdale, the industries dependent on the weirs are so great that their purchase would be chimerical. We must, therefore, seek for other methods of reducing their depressing effects on the salmon fisheries to a minimum.

The clause relating to the fixing of passes to new weirs or to those that have been raised or altered, so as to create increased obstruction to fish seems to me not to require

any correction at all; it works fairly at present, but it should be extended to all obstructions artificially created. A difficult case has arisen during the past year under the proviso at the end of this section, which provides that no injury shall be done to any river or canal or inland navigation. (See Report on the Dee.)

The first three words of Section 23, Act 1861, require to be added to. After the words "any proprietor of a fishery," should be inserted "or Board of Conservators or other persons authorized may, with written consent of the Home Office, attach to every dam existing at the time of the passing of this Act a fish pass."

It is thought desirable by some, that power should be given to Boards of Conservators to cut a notch or inlet in weirs for the purpose of supplying water to a fish pass. I consider this would be a very dangerous power; for although, in some instances, it would do no harm whatever, in others, particularly in old and rotten weirs, of which there are many throughout the country, it would endanger the stability of the weir very much indeed; and, supposing the weir to be blown down, the Conservators would have to pay compensation. There are but few, if any, Boards of Conservators who would run this risk. In nine cases out of ten the water not used by the mill, would, if properly economized, be amply sufficient to fill a fish pass; all, therefore, that is required is power to fasten boards on the tops of weirs, so as to concentrate and utilize the water which would otherwise be wasted.

This would be nearly if not quite as good a plan as cutting a notch in the weir, and would remove the continual apprehension which would be always hanging over those who made the notch. In flood time these boards could easily be removed or made to fall of themselves, so that there would be no danger of the landed proprietors above asking for damages due to water unduly ponded up. Moreover, I believe that future experience will lead us in many instances to make salmon passes *around* and not through or over weirs. In this case the entrance to the pass can be so arranged, as to absorb all the superfluous water not required by the mill.

I think a compulsory power may fairly be given to Conservators to purchase land on either side of a weir for the purpose of making a fish pass. This power is given in Mr. Dillwyn's Bill.

They should also have compulsory power to make an opening at the head of this fish pass not in any way connected with the structure of the weir. This opening should take the water for the use of the pass which is not required for the use of the mill. This question should be decided by the fixing of a pole or gauge with a mark upon it; this mark to be decided after due local inquiry. As long as the water is below the determined mark on the gauge, the door at the head of the pass should be closed; when the water is above the mark the door at the head of the pass should be opened, and kept open until it drops again below the mark; thus no water would be allowed to waste itself by trickling over the weir, and the miller could not say that either the stability of his weir or the power of his machinery was interfered with in the slightest degree. I have been in consultation with Mr. Mostyn Owen, secretary of the Dee Board on this point. Mr. M. Owen himself built Erbistock Pass on the Dee on these principles several years ago, and it has acted well ever since.

I find that a plan very similar to the above is proposed in clause 38 of Mr. Dodds' Bill.

We require a clause to prevent fish passes being injured or obstructed, and also to render it prohibitory, that any person use any device such as placing big stones, putting white objects into the river, anchoring otter skins so as to deter and prevent the salmon entering the pass. It should also be made totally illegal to angle either in the actual fish pass or within a certain number of yards of it.

As regards the legality of weirs, I am strongly of opinion that it would be most unadvisable to give power to inquire into the legality of all weirs.

Depend upon it, it would raise great opposition to the salmon question in general throughout the kingdom, and would be otherwise very injurious.

Nevertheless in cases where the Conservators demand an inquiry into a given weir, it would possibly be judicious that such inquiry should take place, if it can be shown that there are sufficient grounds for such an inquiry.

Should the weir be found illegal, the owner should erect a pass at his own expense, to be approved by the Secretary of State. If found legal the Boards of Conservators would have power to affix a pass, subject to the same approval.

Power for the Secretary of State, on the application of Boards of Conservators, to approve fish passes already made is highly desirable.

A most important amendment to the 26th Section of the Act of 1861, is required. It relates to the supply of water to fish passes. My opinion is, if the words were altered it would cause the clause to become confused. The section, therefore, should be drawn

again and bear the meaning, that all sluices and hatches in connexion with any dam, should be shut down and kept closed on nights and Sundays, and whenever the mill is not at work ; this should apply to all weirs where there is a pass or not.

Immediately following the question, the consideration of the instruments used for the capture of fish in weirs or by nets, comes the question of the licence duty to be paid by those who use these instruments. The sections in the present law bearing on this point are all in the Act of 1865, as the system of licences was not instituted at the time of the passing the Act of 1861. These sections are from 33 to 38, both inclusive ; and Section 28, relative to the mortgage of licences. I know from experience that the system of licences is now generally approved by the practical fishermen throughout the country. Licences are the only revenue of the Board, by means of which they are enabled to preserve the river, and so breed fish for the future benefit of the fishermen. It is an admirable system, and to it the increase of our salmon fisheries may, in a great degree, be attributed, inasmuch as the funds collected thereby are applied to the important objects of protection and preservation, and the more revenue is collected by licences the cheaper we may expect salmon in our markets. The present system, however, is not yet perfect. By the present law a licence for a net or other instrument must be the same throughout the whole district. This is very unfair ; for instance, a commercial fisherman in the estuary, who fishes every day and at all available times throughout the season, pays five pounds for licence of a draft net. At the same time an upper proprietor living, it may be, fifty miles above the estuary, and who owns a fishery, also uses a draft net. He fishes, possibly, to supply his table only with fish, and uses his net but seldom. It would be of no avail to use it often, as the fish are not there to be caught ; yet the proprietor of a fishery in the upper waters has to pay just the same as the commercial fisherman in the estuary ; this is not right. The licence should be made *ad valorem* to the money produce of the fishery. Thus, for instance, in some fisheries the licencees should pay from 10 to 20 pounds, while those above should pay from two to five.

The transfer of licences is also a very important question, especially to the Dee district, where the system is carried out to a very great extent. The Avon, Devon, Board are also very anxious that all landowners or occupiers using a net on their land should pay a licence for the same, whether the net be their property or not.

As regards the transfer of licences, the question of making them personal, instead of attached to the instrument, has been very much advocated, and this plan seems to meet the difficulty of the transfer of licensed nets ; paragraph 4 of Section 95 of Mr. Dillwyn's Bill goes far towards bringing this about. But Mr. Mostyn Owen, whose river will be chiefly injured by the transfer of licences, wishes that the word "agent" should be introduced after the word "servant," and the following words added : "No person shall be considered "to be a servant or agent of a licensee unless he has paid a small sum* for a licence to "act as a working fisherman." We want a simple means of registration, as is the case with cab-drivers in London, and under the Pedlars Act, so that all persons not really employed by the licensee shall be prevented from fishing.

In conclusion I venture to express a sincere hope that Parliament will this year give us a new Salmon Act. Those who are connected with the salmon fisheries earnestly desire this, because they are aware that ample and well sifted evidence as to facts and opinions is now before a tribunal most competent to decide what measures will best tend to solve the difficult and important questions submitted to their verdict. A large class of British subjects—poor as well as rich—anxiously await the desired legislative enactments, which will enable them with fairness, impartiality, skill, and judgment to develop to the utmost that branch of national wealth and industry—the salmon fisheries—with which the shores and rivers of this highly favoured island are enriched by Providence.

I have the honour to be, Sir,

Your obedient servant,

FRANK BUCKLAND.

March 1872.

MR. WALPOLE'S SIXTH REPORT.

SIR,

EFFECTS OF
A DRY YEAR

ON three successive occasions, in three successive years, it has been my duty to commence my annual Report by referring to the dry weather of the preceding season as accounting in some measure for its peculiarities and deficiencies. 1868 had been memorable for a drought extending "not only through the entire summer, but late into the autumn." The want of rain in 1869 was as perceptible as in 1868; while "the fishing season of 1870 was marked by a continuance of the same features." The effect of this continuous want of rain was very peculiar. The fish, unable to ascend the rivers, were captured in unusual and unprecedented numbers by the net fishermen. The upper proprietors, on the contrary, were deprived of nearly all participation in the sport and the profits. The gross yield of our fisheries continued annually to improve, though one section of the public, and that not the least important, fancied from their own experience that it was gradually declining.

On anglers.

That I am not exaggerating the effects of these years of drought on the upper proprietors, a few facts and a little consideration will sufficiently prove. Speaking roughly, rod fishermen fairly represent the upper proprietors; net fishermen, the tidal fisheries. For three years the former had been continually diminishing in numbers. There were 2,350 rod licenses in England and Wales in 1867, and only 1,616 in 1870. Between 1867 and 1870 there was, in other words, a reduction of nearly one third in the number of our anglers. The diminution in the amount of license duty for rods fell off in similar proportion from 1,816*l.* in the former year to only 1,240*l.* in the latter; and there are, unfortunately, good grounds for believing that the diminution neither in the number of rods nor in the amount of license duty was as rapid as the falling off in fish and in sport. In one river alone, where 2,000 fish had been caught by the rod in 1866 and 1,000 in 1867, the Conservators were compelled to confess in 1870 that "with rods comparatively little had been done;" while on another river, in which 1,200 fish had been taken by angling in 1866, only 100 were killed in 1867, 20 in 1868, 167 in 1869, and 125 in 1870. I repeat these two prominent examples, which I cited in my Report of last year, to add force to my illustration of the effect of long continued drought on the upper proprietors of a river.

Two consequences, of by no means equal importance, unquestionably resulted from this state of things. The upper proprietors, naturally discontented with successive bad seasons, ceased in some cases to take an active interest in river cultivation when they found that it was attended with no direct advantage to themselves. The men, in other words, whose assistance is most necessary, whose apathy is certain to be productive of inconvenience, seemed likely to hold aloof from the movement for preserving our streams. Their natural impatience in some cases found expression in the press; and, hence the second and least important effect of the drought. When different correspondents, living in various parts of the country, successively related the history of their own bad fortune, the public laid the fault on the law, and not on the weather; and insisted that salmon legislation had only resulted in fewer fish and a dearer market. This conclusion was indirectly assisted by another circumstance. Net fishermen are, as a rule, as silent as anglers are communicative. The angler is an educated man who has no difficulty in describing his views or his experience; net fishermen, on the contrary, are with few exceptions illiterate persons, who would be incapable of writing a letter to a newspaper. The angler, moreover, has no inducement to silence; he directly profits by reading the experience of other persons, and repays the advantage by relating his own. The net fisherman, on the other hand, whether wisely or unwisely I am not considering, concludes that he has a direct interest in concealing the results of his fishing; his confession of a success would, he imagines, tend to the increase either of his rent or of his license duty, and he is therefore disposed to understate his take.

There can then be little wonder that, when scores of anglers were complaining of the want of fish in their own waters, and the net fishermen were preserving the strictest silence on their own experience, the public should have arrived at the conclusion that the want of sport of which they read was really due to a diminution in the number of fish;

and that a notion should have consequently gained ground of the result of preservation which was really erroneous.

The more accurate knowledge of the actual state of things, which resulted from the publication by my colleague and myself, in our annual Reports, of information derived from local persons in every part of the kingdom, removed after a time the prevalent misapprehension. It was then seen that, bad as the sport of our anglers had been, it was impossible to ascribe their failure to a want of fish. Judged by the test which I have already applied to our rod fisheries, there was little reason to fear for the welfare of the net fisheries. The number of men employed in net fishing for salmon had indeed been 3,029 in 1867, against 2,977 in 1870. But as the revenue from net licenses, which had only amounted to 3,851*l.* in the first year, had risen by 1870 to 4,757*l.*,* the slight decline in the number of men employed was more than accounted for by the successive additions which had been gradually made to the rate charged for licenses, a policy obviously calculated, and in some instances intended, to diminish the number of engines engaged in capture.

On net fishermen.

When then it became clear that our net fisheries were annually increasing in prosperity, and that salmon were taken by hundreds at each tide, it was no longer possible to complain that river cultivation had failed to produce more salmon. But though their original misapprehension was consequently removed, the irritation of the upper proprietors became greater than ever. It was one thing to conceive that they were suffering in common with the whole neighbourhood; it was another to be told that their want of fish and sport was compensated by the excessive profits of their neighbours below them. When it became certain that they were catching fewer fish, and the net fishermen were catching more, it seemed almost a logical conclusion that their catch was smaller because that of the net fishermen was larger; and they immediately began to consider what the reason of this might be.

There was no great difficulty in finding a sufficient reason in every river in the country. One had an impracticable weir; and the weir was assumed to be in fault. Another had the sewage of a town poured into it; and how, it was confidently asked, could fish be expected to face the nuisance? A third was over-netted, and was consequently assumed to be in a hopeless condition unless the Legislature could be induced to sanction the extension of the weekly close time to 48, 60, or even 72 hours in each week. The fact that neither the weir, nor the sewage, nor the netting had interfered with the anglers in 1866, because 1866 had happened to be a wet year, was entirely forgotten; and a belief arose that no legislation could be efficient or beneficial which did not deal in the most comprehensive manner with the causes hastily assumed to lie at the root of the evil.

The results of this misapprehension were very unfortunate. Some of the most prominent fishery reformers became hopelessly involved in a demand for fresh legislation which was as impracticable as it was certain to be unsuccessful. Nothing was adequate for the occasion but the most crucial provisions, the most absolute powers. It was in vain to show that more moderate measures were likely to be sufficient; that though there might be difficult weirs which it might be necessary to remove or to "bridge," there was no reason to fear that the present powers of the law, with very slight amendments, would not be sufficient to deal with them; that, though there were many instances in which it was necessary to regulate the mode of net fishing, an extension of the weekly close time to 72 or even 60 hours was not really required. Moderate counsels were assumed to be inappropriate and inadequate, and a sweeping measure was actually sketched out. The consequence might have easily been foreseen. Every section of the riverside public became alarmed. The millowners feared the confiscation of their property; the net fishermen the forced abandonment of their craft: and an opposition was excited which has had the effect of postponing for three years the amendments which were really necessary, and which might under other circumstances have been obtained in 1869.

I have analyzed at some length the history of the years of drought, and of the misconceptions to which they gave rise; because, as it is my good fortune this year to be able to speak of a season which has been characterized by constant rain, the experience of the last few months enables me to test the accuracy of the conclusions which I have already arrived at.

* Vide Appendix 2 to this report. The numbers for 1867 have, it must be borne in mind, been corrected for the purposes of comparison both in that Appendix and in the text by the addition of the number of persons employed on the Eden, and the revenue received in that district, in which no license duties were in force till 1870.

EFFECTS OF
A WET YEAR

On anglers.

On net
fishermen.

If I am right in insisting that the absence of all sport in 1867-8-9-70 was nearly entirely attributable to drought, it follows that the rains of 1871 ought to have improved the prospects of our anglers. Let us test the theory by the facts before us. "The take of fish has increased considerably in the upper waters," writes the Lune. 202 fish were taken by the rod in the Ribble, against 125 last year. Nearly 800 fish were taken by the rod on the Usk. The take has "increased in the upper waters" of the Wye. "The upper parts of the Severn were slightly benefited." The take has "increased in the upper waters" of the Trent. These are the only instances in which the Conservators have separated the take in the upper and lower waters. It seems then fair to assume from these answers that the upper waters have especially benefited by the wet weather of last year. And this conclusion is the more marked if we turn for a moment to the take in the tideway. It has decreased in the estuary of the Lune; it has "decreased in the estuary" of the Wye. "The estuary fishing was not nearly so good" in the Severn, and the take has "decreased in the lower waters" of the Trent. In other words, the fish, instead of being confined by low water to the tideway, and consequently captured in great numbers by the estuary fishermen only, have been more evenly distributed through our rivers to the benefit of the upper proprietors.

An examination of the returns* from two of our best rivers, the Severn and the Ribble, will confirm, in a very remarkable way, the accuracy of this theory. The take on the Ribble in 1870 and 1871 was:—

	1870.	1871.	Increase about	
Below Preston - - -	6,700	7,226	8 per cent.	
At Preston - - -	800	1,500	90 per cent.	
Between Preston and Clitheroe -	136	1,543	960 per cent.	
Between Clitheroe and Settle -	71	217	200 per cent.	
In the Hodder - - -	68	128	90 per cent.	

Now let us take the case of the Severn:—

	1870.	1871.	Increase about	Decrease about
Tidal waters - - -	22,300	15,750	—	30 per cent.
Non-tidal waters - - -	200	1,120	460 per cent.	
Rods - - -	12	44	260 per cent.	

The figures in these two tables deserve most careful study. In each case an immense addition is perceptible in the take in the upper waters. From the one, in which the most detailed account of the take is given, it is evident that this increase was chiefly apparent in the mid districts of the river. The Conservators of the Severn, it will be seen from a reference to the Appendix, themselves supply the information which their table hardly affords, and state that the take in that portion of the stream was enormously increased, while the upper waters only slightly benefited. We may conclude then that the same consequence—the improvement of the position of the middle proprietors—has ensued from a wet summer in both cases. Singularly enough, the exact comparison between the two rivers terminates at this point. In one of them the take of fish in the tideway has slightly increased; and in the other it has actually declined. But it is not difficult to ascertain the cause of this distinction. The estuary of the Severn is large and, in parts at any rate, deep; the estuary of the Ribble, on the contrary, is shallow and hot. Even then in dry years there is sure to be sufficient water to tempt the fish to enter the Severn; they do not, on the other hand, in dry seasons readily enter the shallow and hot estuary of the Ribble. The upper proprietors on both rivers are equally benefited by a wet year, because a proportion of the fish entering the estuary are enabled to pass up to them; but, while in the one case the net fisheries participate in the benefit, in the other the gain represents a distinct loss to the net fishermen, because a proportion of the fish, which under any circumstances would have entered the estuary, are able to migrate beyond the reach of their instruments.

* The returns, which I have given in the text, will be found in the Appendix, pages 64, 69.

These examples will sufficiently account for the otherwise inexplicable circumstance, which is apparent on a careful inspection of the Appendix to this Report, that in some cases, notwithstanding an increase of fish, there has been a decrease in the take; and I shall not consequently feel it necessary to allude in more detail to the few instances in which the first of our questions has been answered by the Conservators in that sense. But, though there are districts in which the wet weather has interfered with the net fishermen, the deficiency in these cases has been more than compensated by the increased take in other rivers; and I am consequently able to present a more favourable picture of the condition of our salmon fisheries than has ever on any previous occasion been published.

I have often insisted that the returns of license duty form on the whole the best indication of the real state of our salmon fisheries; and the very gratifying increase which has occurred this year in the number of instruments licensed affords, I contend, the strongest proof that the condition of our fisheries is marked by a real improvement.

RESULTS OF
PAST SEASON.

The returns of license duty can of course be only used for comparative purposes when the rate charged has not been varied from year to year. In 1871 two important alterations were made in the rates. On the Ribble, the Conservators reduced the duty for rods from 1*l.* to 10*s.*, and the large addition to the number of rods licensed in the district (the number rose from 141 to 302) was of course partly due to an alteration over which the Secretary of State, it must be remembered, has no control. On the Towy the Conservators adopted an opposite course, and raised the rate on all the instruments to the maximum they are at liberty to impose. It was my duty early in the year to investigate the grounds for an appeal which had been made against this alteration. The fishermen who opposed it alleged, 1st, that it had been carried only by the casting vote of the chairman of the Board, and, 2nd, that the position of the fishermen of the Towy did not justify a high scale of duty. I ascertained on careful inquiry that though the first of these allegations was true it arose from the circumstance that the alteration had been made at a very small meeting of the Board, which the opponents of the measure had attended in force. On the subsequent occasion on which I was present the minority against the proposal had not increased, but the majority in favour of it was sixfold greater than it had been before. It was not therefore possible to attach much weight to the first of the fishermen's allegations. Nor was the second of much more force. It is true that the Towy is fished by very poor men. But it is equally true that the men are poor because there are too many of them, and that the produce of the river is consequently divided among too large a number of recipients. It seemed therefore demonstrable that, in the interest of the fishermen themselves, some steps were necessary to limit their number, and the only available means for that purpose seemed to be the raising of the rate of the license duty. The addition made to the rate does not appear to have been severely felt. At the date of my inquiry the fishing season had commenced, and some little interval necessarily elapsed before the higher scale was approved. Yet, though the net fishermen had full notice of this circumstance, so little difference did it make to them, that the majority actually waited till the higher scale was in force before taking out their licenses; and the sole effect of the change was a diminution of six coracle nets and one hand net in the number of instruments licensed.

Alterations
in rate of
license duty.

The changes in the license duty have therefore tended slightly to increase the number of rods and slightly to diminish the number of nets. The rod licenses a year ago amounted to only 1,616, and the revenue to only 1,240*l.* 2,054 anglers actually thought it worth their while last year to pay 1,469*l.* for the privilege of salmon fishing. Whatever may have been the experience of anglers in different parts of the kingdom, this one fact proves that some extraordinary cause has been in operation to produce this remarkable increase. After the remarks that I have already offered, the increase in the number of net fishermen will not be expected to have been as large as that in the number of anglers. But here again I have to record a most satisfactory and gratifying state of things. The numbers of the net fishermen have risen from 2,977 to 3,383; their payments from 4,757*l.* to 5,370*l.* The clear inference from these figures is that a gradual and progressive development is taking place in our salmon fisheries.*

The knowledge that 3,383 men have been engaged during the past year in net fishing for salmon ought to help us to ascertain with some correctness the gross produce of our salmon fisheries. Net fishermen, as I have remarked in a previous Report, may be assumed to conduct their business on commercial principles; and the existence of a

VALUE.

* It must be remembered that the figures in the text rather understates the improvement; since they take no account of the addition, during the past year, to the number of general licenses, which a reference to the 1st Appendix to my Report will show has been considerable.

definite number of net fishermen consequently implies a production of a corresponding value. There are good grounds for thinking that the gross earnings of each net fisherman are at least 28*l.* a year,* and it consequently follows that the gross earnings of 3,383 net fishermen must have amounted to about 95,000*l.* We have still to add to this considerable sum the produce of the numerous rivers which are not in districts, and placing this according to my estimate of last year at only 6,000*l.*, the produce of the English fisheries cannot be less than 100,000*l.* a year.

That this estimate is not exaggerated two reasons besides that already advanced in a note may be quoted to show. In the first place, in 15 districts† we have an estimate from the Conservators themselves of the produce of the year. In these rivers 1,772 men are engaged in net fishing, and the gross produce of the fishing amounted to 78,000*l.* If then 1,772 net fishermen earn 78,000*l.* a year, the barest knowledge of the rules of proportion justifies us in assuming that 3,383 men fishing in the same country and under the same conditions will earn about 150,000*l.* a year. In other words, the produce of our English salmon rivers may, in lieu of 100,000*l.*, as I have placed it, be taken to have amounted to 150,000*l.*

The moderation of my own estimate is still more strikingly seen by a comparison of the known results in Ireland with the results in this kingdom. The Irish Inspectors tell us that the produce of the Irish salmon fisheries may be valued at 400,000*l.* Irish salmon fisheries are held under the same rights as English fisheries. Labour in Ireland is not certainly more highly paid than in England. But in Ireland the total license revenue only amounted in 1870 to 7,233*l.*; the total number of net fishermen to 7,733. If we take the former of these tests it seems fair to insist that as the revenue in England amounted to 7,146*l.* or to only 87*l.* less than that in Ireland, the fisheries of the two countries must be of nearly equal value. If we take the latter it is equally possible to argue that, if fisheries producing 400,000*l.* worth of fish attract the labour of 7,733 net fishermen, the English fisheries, on which 3,383 men are engaged, must produce at least 175,000*l.* worth of fish. In other words, that I should have been justified in adding 75 per cent. to my estimate of the actual produce of our rivers.

But I am far from saying that a gross produce of 100,000*l.* a year ought to satisfy us with the present position of things. I have quoted these figures, not from any mere satisfaction with the actual condition of our salmon fisheries, but because I conceive that the progress which has already been made affords a good indication of the prospective improvement we have still before us. And yet the results which 10 years have produced are, to say the least, striking. I know that it is the fashion to say that it is impossible to measure the progress we have made since 1861, because no one has any accurate knowledge of our original position 10 years ago. But it seems to me that it is a complete answer to this allegation that the calculation was certainly made at that time by the men

* On the Tyne we know that 665 fishermen caught upwards of 120,000 fish, which, at only 8*s.* each, would be worth 50,000*l.* Each of these men then earned upwards of 75*l.* in the course of the season. It was given in evidence at Chester that a working fisherman, after paying the owner of the boat and net a share of the profits, was earning as much as 2*l.* 10*s.* per week; and consequently, if we assume the fishing season on the Dee to have only lasted for 16 weeks, the 225 licensed fishermen alone must have earned 9,000*l.*, or 40*l.* each. The value of the take on the Severn was estimated by the Conservators in their annual report at 11,200*l.* or nearly 24*l.* for each of the 475 net fishermen engaged on that river. If then in the rest of England the fishermen on an average received only 12*l.* each, the estimate in the text of my Report will be justified.

District.	No. of licensed net fishermen.	No. of fish caught by net.	Value estimated at 10 <i>s.</i> per Fish.	District.	No. of licensed net fishermen.	No. of fish caught by net.	Value estimated at 10 <i>s.</i> per Fish.
			£				£
Lune - - -	77	1,300	650	Brought forward	848	29,695	14,847
Ribble - - -	209	10,412	5,206	Axe - - -	21	209	104
Clwyd and Elwy	18	738	366	Frome - - -	6	45	23
Cledy - - -	6	70	35	Avon (Hants) -	120	1,800	900
Severn - - -	475	16,870	8,435	Stour - - -	4	3	1
Avon, Brue, &c.	18	200	100	Wharfe - - -	75	2,211	1,106
Fowey - - -	36	60	30	Derwent - - -	33	1,000	500
Tamar and Plym	9	50	25	Tyne - - -	665	121,600	60,800
Carried forward	848	29,695	14,847	Total - - -	1,772	156,563	78,281

N.B.—The Severn Conservators estimate the value of the fish at 13*s.* each.

who were most competent to make it. Mons. Coumes in 1863 was afforded every facility by my predecessors for obtaining this information; and as the result of an elaborate inquiry he placed the yield of our salmon fisheries at 18,000*l.* a year. The late Mr. T. Ashworth had opportunities of arriving at an accurate conclusion on the subject which are enjoyed by few private individuals, and he insisted two years afterwards that the proceeds were certainly less than 30,000*l.* a year. No grounds have ever been advanced for discrediting either of these calculations; and it is consequently only fair that they should be accepted, and that we should acknowledge that the yield of our English salmon fisheries has, if we compare the highest of these two estimates with the lowest of my own, considerably more than trebled in the last 10 years. I conceive that there is no other description of real property which has ever in a single decade so increased in value.

This most startling and satisfactory increase is of course primarily due to the great change effected in our fishery laws in 1861, and to the exertions of my immediate predecessors, Messrs. Ffennell and Eden. One of those gentlemen unfortunately died, and the other was compelled to retire from the office he had so ably filled, before the results which are so greatly due to their discretion and activity became visible. We are reaping now the fruits of the seed which was sown under their supervision, and however much our capital may with increased care continue to accumulate, it would be unfair to forget that in the process of accumulation the first step is the most difficult, and that the first advance in the improvement of our English fisheries is mainly due to Messrs. Ffennell and Eden.

But the exertions of these gentlemen would have been comparatively useless if they had not been seconded by the provision of local Conservators and local preservation. The most important portion of our existing law is probably that which provides for the constitution of local Boards of Conservators. The provision has a double advantage. In the first place it creates a local body specially responsible for the development and management of each river; and in the next place it ensures a certain amount of protection to the fish. I have noticed in previous Reports the very considerable protection which has been afforded in this way to our English fisheries. Nearly every important salmon river has been already placed under the jurisdiction of a Board of Conservators. During the past year two additions have been made to the number of boards which had been previously formed. The first and the most important is that of the Rhymney in South Wales. The Rhymney is a small river of considerable natural capabilities, and some years ago used to produce a proportionate number of migratory salmonidæ. But unfortunately, like many other rivers in South Wales, the Rhymney has been subjected to many years of unfair treatment. Collieries pollute the stream at its source; some naphtha works inflict, I regret to say, great injury on it at Maesycwmyr; a large tin-plate factory, the proprietor of which has hitherto declined to take the precautions necessary for recovering to the fullest possible extent his waste pickle, is situated a little lower down; and, to complete this category of evils, some "adventurers"—I use the word in its technical sense—are renewing the working of a long-disused lead mine. The gentlemen in the neighbourhood were at last alarmed. Though the remedies which the Salmon Acts afford are unfortunately imperfect, they saw that the task at which it was my good fortune to assist in 1869 on the neighbouring river, the Ebbw, had been partly successful; and they wisely determined that, as an imperfect remedy is better than none, it was advisable to place the river under the protection of the Act of 1865. The resolution was arrived at late last autumn, but the district has already been formed; a preliminary inspection of the river has been made by my colleague and myself, and the new board is now actually at work.

NEW DISTRICTS.

The Rhymney.

The formation of the Board is of importance in another sense, because it will be the means of affording additional protection to the Bristol Channel. The Rhymney has been defined to include the northern side of the Channel, between Cardiff on the west, and the westernmost boundary of the Usk district on the east. It is obvious then, from the merest glance at the map, that all fish migrating from the sea to the rivers will have the advantage of additional preservation; and it seems fair to conclude that while the Rhymney may possibly derive some benefit from levying a toll on Severn, Wye, and Usk fish, these three rivers may themselves be improved by the increased protection which their fish will consequently obtain.

The second district formed last year is in one sense of less importance. It includes the three rivers, the Rother, Tillingham, and Brede, which unite at Rye, and which have from time immemorial been frequented by a few migratory salmonidæ. At the request of some of the landowners in the district, I inspected the Rother last May, and subsequently attended two meetings,—one at Bodiam, and another in the following month at

The Rother.

Rye,—at which the propriety of forming a fishery district was discussed. It is a matter of sincere satisfaction to me that these meetings resulted successfully ; first, because there is no reason why a river which has always produced some migratory trout should not produce some more ; and, second, because, as the Rother by continual poaching has been almost wholly denuded of fish, some organization for its preservation seems absolutely necessary, and there is no other organization available than that which the Salmon Act affords.

There is, however, one question in connexion with these rivers, which must, sooner or later, arrest the attention of the Conservators, and which perhaps deserves a word from me now. On the coast adjoining the estuary, sea fish, principally herrings and mackerel, are commonly caught by some large fixed nets (locally known as kettle nets*), which of course may take, and unquestionably do occasionally take, a salmon trout. As these nets are nominally and practically used for catching other fish, it seems impossible to impose a license duty on them ; it is simply the duty of their proprietors to return to the water any salmon they may happen to take in them ; but it requires no great discernment to foresee that while human nature is constituted as it is there is little chance of a net-fisherman returning a valuable fish to the water, unless he is actually compelled to do so, and in a district like the Rother the Conservators can hardly be expected to maintain a sufficient supervision to do this. The case therefore affords one more illustration of the necessity, on which I have frequently insisted, of some legislative machinery to enable the Conservators, with the approval of the Secretary of State, to regulate the use of engines which, though not ostensibly used for the capture of salmon, incontestably interfere with the salmon fishery.

Protection.

So far we have been considering the increase which has been made to our organization in the past year. We have still to consider the protection which this organization has created. To make this more apparent, I have summarized in Appendix VII. to this Report, the information which has been furnished us in reply to the 10th of our questions. It is evident from this information that no fewer than 96 water-bailiffs are permanently employed in the protection of the English and Welsh salmon fisheries, while 99 more are in addition temporarily engaged during the spawning season. If we assume that each of these temporary men is employed for three months, their service will of course be equivalent to that of 25 water-bailiffs employed throughout the year. Placing the yearly wages of each man at 50*l.*, we arrive at the very satisfactory conclusion that no less a sum than 6,000*l.*, or more than 80 per cent. of the total revenue derived from license duty is expended in the *bond fide* duty of protection. A very important suggestion almost naturally results from these figures. If the Conservators are spending 6,000*l.* a year in the maintenance, on an average, of 121 water-bailiffs, would there not be an obvious advantage in increasing the constabulary force by that number, and preserving the rivers entirely through the constabulary ? This force a year ago mustered 9,272 constables, so that the immediate effect of my suggestion would be to add one per cent. to its strength.† But the advantage to be derived from the suggestion hardly ends here. If the immediate preservation of the river were undertaken by the Chief Constable of each county, he would of course have a discretionary power to employ the men on the duties which he considered the most urgent. All that would be required of him would be to give the river on an average the advantage of the precise number of men for which the Conservators contracted. If there were no probability of poaching, the men might be nearly wholly withdrawn from their riverside duties. If, on the other hand, there was a likelihood of a serious affray, it would be possible to meet it by employing an irresistible force. The scheme has for some years been adopted in Northumberland and a few other counties and has been attended with the best results. I cannot see why it should not be capable of a more extended application. But though for the sake of economy and efficiency I am disposed to recommend the change, I am far from desiring to imply that our existing water-bailiffs are inefficient public servants. On the contrary, notwithstanding some discouragement and some danger, they have undoubtedly rendered important and zealous service. The prosecutions which in consequence of their exertions have been instituted against offenders, I have summarized, in accordance with my annual custom, in Appendix VIII. to my Report. 432 prosecutions have been instituted in the year against 408 in 1870, and 345 convictions have been obtained. It is satisfactory to find that, on the whole, the Magistrates have in the past year shown more readiness in

* The kettle nets, it may be interesting to note, probably derive their name from the old fishing weir, the Kidellus or Kiddle, which is mentioned in Magna Charta and many early fishery statutes. In their turn the kettle nets are, I conceive, responsible for the old proverb "a pretty kettle of fish."

† As a matter of fact 17 of the water-bailiffs at present employed are members of the police force. The addition would not therefore be quite so great as it appears from the text ; but it would be more than 1 per cent.

dealing with offences against the Salmon Acts, though some gentlemen seem still to draw an unaccountable distinction between offences against these and all other Acts. The most cursory glance at the Appendix will prove that in many cases disregard of the law has been followed by what I venture to term an inadequate penalty. I should not be justified in opposing my opinion to that of the Magistrates if it were not that the view on which I am insisting has found favour with the Legislature; Parliament has, for instance, seen fit to enact that the minimum penalty for fishing without a license shall be not less than double the amount of license duty required for the instrument. The law may be a good one or a bad one, but as long as it is the law I am surely justified in saying that it ought to be carried out. And yet there are instances where the Justices have obviously contented themselves with imposing a smaller penalty than that which the law expressly states shall be inflicted for this offence. It would perhaps be invidious if I were to draw pointed attention to individual cases which can easily be ascertained by a reference to the answers, in the Appendix, to our 9th question. Nor is this the only circumstance of which I conceive the Conservators have a good right to complain. The law now imposes a minimum penalty for second offences. But the neglect in some instances of the clerks to the Justices to register offences or to notify them to the boards makes it almost impossible in many cases to prove the first offence. The difficulty would be obviated if the Justices' clerks were compelled to forward a certificate of every conviction to the clerk of the Conservators; or if secondary evidence of previous convictions were allowable. It would perhaps be safer to adopt both of these remedies. If the law is to be enforced effectually it is essential that at least one of them should be granted.

But at the same time it must not be forgotten that, great as the protection is which has been afforded to our fish, the water-bailiffs are sometimes powerless in those cases in which their services are specially required. Salmon poaching is nowhere carried on with more determination than in those counties where small freeholders still exist in considerable numbers. These freeholders connive at the practice of fish spearing in which their forefathers have for generations indulged, and the moment one of them is convicted he immediately, and as a matter of course, warns the bailiff for ever from his land. The water-bailiff is consequently unable to go to the very spot where it is almost certain illegal practices will be committed. It is true that he has the power of providing himself with a magistrate's order to enable him to do so. But the magistrate can only grant the order if the bailiff is prepared to swear that he has reasonable cause to suspect an illegal act will be committed, and the order, after it has been granted, only holds good for 24 hours. I proposed five years ago to remedy this defect, by continuing the duration of the order from 24 hours to a month; but I have reluctantly come to the conclusion that even this provision would be inadequate, and that if full protection is to be obtained the Conservators themselves must have the power of ordering their keepers to enter and remain upon any land adjoining a salmon river in which there is reasonable cause to suspect that an infringement of the Salmon Fishery Acts may be anticipated.

Nor is this the only addition to the law which is necessary. At the present moment a water-bailiff is authorised to search a boat used in fishing for salmon; but he has no power to compel the fisherman either to stop his boat or to come on shore to be searched. It might possibly be a vexatious thing to say that a *bonâ fide* fisherman should be obliged on the order of the bailiff to give up his fishing and come to land; but there could be no hardship in insisting that if the man should not be made to come to the water-bailiff he should not at any rate be permitted to row away from him. The bailiff, in other words, should have power to stop any boat, and a penalty should attach to the owner of the boat that declined to stop. If it were provided that every fishing boat should be distinctly marked, and that the owner of the boat should *primâ facie* be responsible for the acts of the persons in it, a very considerable step would be taken towards the prevention of one kind of illegal fishing.

It must be remembered that the mere detail of water-bailiffs actually appointed affords only an imperfect idea of the amount of protection which our rivers receive. The exertions of these men are on nearly every river supplemented by the employment of private Keepers, whose masters are so good as to allow them to assist in the preservation of fish. This very beneficial circumstance is due chiefly to the existence of a section of the Salmon Act, which of late years it has been the fashion (for which I fear I am myself partly responsible) to decry. By the 14th section of the Act of 1865 every Magistrate owning or occupying lands bordering on a salmon river of an annual value of 100*l.* is an *ex-officio* Conservator of the district in which he resides. This provision has naturally had the effect of establishing a chain of gentlemen from the source of each river to the sea, specially responsible, from the accident of their position, for the improve-

Ex-officio
Conservators.

ment of the stream. One considerable advantage which has directly resulted from this circumstance is that in every part of each district the water-bailiffs have an authority to whom in any matter of difficulty they are able to appeal. But a still greater benefit has arisen from the fact that Magistrates in the position of Conservators have in most cases thought it necessary to take active steps to assist in the preservation of the river. The services of the paid staff of water-bailiffs have in consequence been supplemented by those of private Keepers unpaid by the Board, and the public has had the advantage of a direct increase of preservation without any increase of cost.

These consequences are obviously so beneficial that the persons who have the most practical acquaintance with the management of our salmon fisheries have viewed with general alarm the proposal made in the Bill of last year to repeal this provision. Nor has the alteration appeared more acceptable from the circumstance that at the same time it has been suggested to materially change the other elements of which our present boards are composed. Mr. Dodds in his original Bill proposed that each river should be divided by a hard and fast line (the limit of the tide) into two portions; and that the license holders in each district should be entitled to elect an equal number of representatives on the board. The proposal, it was immediately shown, would have thrown the whole power on each river into the hands of the net fishermen, the majority of whom usually exercise only a public right of fishing. The feeling excited by the plan was so strong that Mr. Dodds assented to a partial modification of it. In his amended Bill he proposed that the board should be constituted of three classes; first, the representatives of the license holders above the tideway; second, the representatives of the license holders in the tideway; and third, the representatives of the landed proprietors in the district. The amendment was not, however, generally preferred to the original proposal. It was still considered that the new boards would give too much influence to the net fishermen, whose interest in the river is essentially temporary; and that too little attention had been paid to the riparian owners, on whose support the preservation of every salmon river must mainly depend.

In consequence of the very general dissatisfaction which Mr. Dodds' proposals had created, the Under Secretary of State, Mr. Winterbotham, undertook to amend them. That his amendments were generally accepted as satisfactory, was apparent at the time; and has since become more obvious, as they have been adopted *en bloc* in the Bill which has been prepared by the Committee appointed a year ago at the Society of Arts to represent the salmon fisheries of this country. Mr. Winterbotham's proposals were based on the assumption that there are two interests on every salmon river, both of which are entitled to a certain share in its management. The first is that of those in whose waters the fish are bred, and who, from the mere accident of their position, can never hope to catch so large a share of them as their neighbours; the second is that of those who catch the fish. The latter of these interests, which we have seen practically received the chief consideration in the Bill of last year, consists again, it must be remembered, of two classes; one having an exclusive right of fishing, and consequently a permanent interest in the prosperity of the river; the other exercising a right of fishing common to all Her Majesty's subjects, and therefore caring little for the ultimate improvement of the stream, but actuated by a desire to make the utmost out of it at the moment. The relative importance of the public and private rights, both of which are to be found on nearly every river, differs extremely in different districts; in some places nearly all the tidal fisheries are common, in others they are entirely or nearly entirely in the hands of private individuals. It is consequently obvious that as the interests differ in different cases the constitution of the board, if it is to be based on an elective principle, must equally be distinct. In rivers where there are no public fisheries the solution of the problem is easy. The owner of a several fishery of a certain value, which Mr. Winterbotham, copying the Tweed Act, placed at 30*l.* a year, seemed clearly entitled to a seat on the board; but when in addition to private fisheries there are public fisheries to be considered, some other provision must be added for the representation of the public fishermen. It is clear, from what has been already stated, that the amount of their representation ought to depend on the proportionate value of the public rights; the latter can be most readily obtained by ascertaining the amount of license duty paid by net fishermen fishing in public waters. Mr. Winterbotham consequently suggested that the representation of the public fishermen should vary with the amount of license duty they paid, four members, in round numbers, being given for the payment of the first 100*l.* of duty, and two additional representatives for every additional 100*l.* So far I have been considering the case of those who catch the fish; let me now turn to the case of those who breed them. The largest of the upper proprietors, the persons in whose waters the fish are bred, were, Mr. Winterbotham determined, entitled for many

reasons to a seat as such on the board; but it at the same time seemed possible to amend and improve the existing qualification of an *ex officio* Conservator. At present none but Magistrates are eligible, and there are no *a priori* grounds for conceiving that a Magistrate will make a better Conservator than any other landowner. As the present qualification is both an owner's and an occupier's, the same land in certain cases may be represented twice over; and as it is based on value only, and not frontage, a tenant with no real interest in the stream may in some cases be on the board when a landowner with a very great interest in it may be excluded from it. These defects suggest their own amendments. Owners and not occupiers should alone be eligible. Frontage and value, and not value alone, should be the essence of the qualification; and every landowner, and not magistrates only, should be eligible. We have here then an outline of a board fairly representing every interest on the river. But there is another section of the public who have still to be considered. Salmon fishery legislation is not intended to promote the interests of any one class, but of the entire community; and the public generally have consequently a right to insist that, in the struggle which is perpetually going on between upper and lower proprietors, their own interests shall not be lost sight of. I conceive that the only possible way of ensuring a consideration of the views of the community in general is to insist on the retention on each Board of the nominees of Quarter Sessions. The proposal has precedent in its favour, for from the days of Richard II. to the present time the management of our salmon fisheries has been entrusted continually to the county Magistrates or their nominees; it has experience in its favour, for I think there can be no question that the gentlemen hitherto nominated at Quarter Sessions have done their work admirably; and it affords a reasonable prospect that our rivers will be managed on broad principles, and that the narrow views of individuals will be rejected.

That I am justified in saying that the present nominees of Quarter Sessions have done the work which has been entrusted to them well is, I think, apparent, first, from the improvement that is perceptible in our fisheries; and, second, from the account which I have already given of the protection afforded to the fish. But it must be remembered that protection is only one of the duties entrusted to our Conservators. They have to guard against encroachments in our rivers, whether they take the shape of pollutions or of weirs. It has been so frequently the habit in dealing with the salmon question to shelve the first of these subjects that it seems necessary to make some apology for introducing into this Report a topic to which the Committee of 1869-70 determinedly turned a deaf ear. But I should not be doing my duty if I were to desist from pointing out that it constitutes the most important of all the matters with which we have to deal. The pollution of our rivers is becoming daily a matter of more serious moment. The sewage problem is, indeed, being gradually solved; but sewage is in a salmon sense the least important of the three great sources of pollution. Considerations of public health may induce Parliament to compel our local authorities to desist from pouring sewage into our streams; but our fisheries will be only slightly benefited if steps are not concurrently taken to prevent the pollution of rivers by factories and mines.

So far as the sewage problem is concerned I was glad to find at a visit paid early last year to Kendal that the measures which I have in previous reports stated were in contemplation to divert the sewage of that town from the Kent had been nearly completed. On the other hand, I am bound to add that the sewage of Gloucester still continues to be poured into the Severn, to the detriment of the important salmon fisheries of that river; and that my attention has been pointedly directed to the circumstance, which I thought it consequently my duty personally to investigate, that the sewage of Seaton is discharged into the mouth of the Axe. Festering on the mud banks which are wholly covered with water only at each spring tide, it has so far polluted that river that salmon are thought in consequence to be deterred from entering it till the cooler weather and higher floods of autumn have had the effect of diminishing the virulence of the poison. I suggested to the local authorities of Seaton and to the chief landowner in the neighbourhood the remedy—the irrigation of some low-lying land—which I thought would obviate the nuisance. But though my suggestions were received with an attention which I must take this occasion to acknowledge, I regret to add that the local authorities to whom I applied did not feel themselves able to comply with them. A nuisance, therefore, continually increasing in extent with the growth of Seaton remains unremedied, interfering, as I conceive, both with the productiveness of the Axe, and possibly with the sanitary condition of a rising watering place.

The sewage problem is, however, as I have already remarked, being gradually solved; and we have every reason to hope that in the course of a few years this possible danger to our fisheries may be entirely averted. Other sources of danger are more formidable.

Mines.

With an increasing trade and cheaper money market, we are being continually threatened with the dangers which have hitherto always resulted from a revival of manufacturing and mining industry. So far as mines are concerned, my attention in the past year has been necessarily almost continually directed to two of the great centres of mineral wealth, (1) Wales and (2) Devon and Cornwall. The Wye, the Severn, the Towy, the Teify, the Dovey, and the Rhymney in the one case; the Teign, the Dart, the Fowey, and the Tamar in the other; are being constantly exposed to serious danger. The prospect of the immediate opening of a new working for lead on the Elan, one of the best tributaries of the Wye, was communicated to me last autumn by the Conservators; but as I received, on my remonstrance, an assurance from the promoters of the undertaking that no washings shall be attempted until the requisite catch-pits are made to the satisfaction of the Conservators and myself, I hope the immediate danger to this important river may have been averted. The continued increase in the operations at the Great Van Mine on the Severn has necessitated a recourse to fresh precautions; but, with certain exceptions, when they were subjected to peculiar difficulties from the catch pits being frozen during the severe weather of November, the Managers of that mine have taken considerable pains to prevent any injury arising from their workings. At a meeting of the Towy Board early in the year my attention was directed to the injury both to that river and to the Taf by the Nantymwyn and the Llanfyrnach lead mines. On examining them on separate occasions later in the year, I received reliable evidence to prove that both of them had occasioned considerable injury. In each case my remonstrances were attended with some effect. The promoters undertook to carry out the suggestions I felt it my duty to offer; and I have arranged with the Conservators of the Towy that periodical inspections of both of them shall be made under their orders at short intervals, and the result, should there be anything to report, communicated to me.

The Rhymney, an ill-used river, as I have already had occasion to show, is polluted near its source by the washings from a number of collieries. It is still further threatened at the present moment by the prospect of a renewed attempt to work an old lead mine by the Mid-Wales Mining Company. The promoters are likely, I understand, to encounter some difficulty in obtaining water for their washing operations; but should they succeed in acquiring a right to some from the great landowner whose property immediately adjoins the mine, their undertaking will require the careful attention of the new Board of Conservators; as otherwise a very serious addition will be made to the numerous pollutions by which the Rhymney has been already almost entirely destroyed.

The pollutions on the Teify are still more serious. The mine water, I am informed on what I believe to be reliable authority, has had a serious effect on the cattle kept in the valley. One of Lord Lisburne's tenants, for instance, has in the last 10 years lost 20 colts; and as all of them died on land on which they had access to the mine water, while none were known to die in fields otherwise watered, there seems fair ground for inferring that their death was directly attributable to the poison. Even where the poison is not actually fatal, a disease of the joints, apparently attributable to mineral poison,* frequently ensues; and the beast, though it may not be actually killed, is permanently injured. The South Lisburne mine, which is apparently the most poisonous, is for the moment disused. A drain issuing from the old workings I judged, both by the test of taste, and from the poor appearance of the land through which it flowed, to be full of mineral poison. Practical experiments subsequently made on fish confirmed this conclusion, and as the reopening of the mine is in immediate contemplation, it is obvious that unless great precautions are taken the most serious consequences may ensue.

Though the water from the Florida Mine, which was in full work when I saw it, is extremely thick, it is I conceive hardly of so poisonous a description. The few catch-pits which had been constructed were obviously insufficient to purify the water, and at my suggestion the manager undertook to supplement them with an entirely fresh set, which, I am informed by the Conservators, have been made since my visit.

* I should not venture on this statement if I were not supported in it by high authority. "Animals feeding on the herbage growing in the neighbourhood of copper smelting furnaces," writes Professor Morton in his *Manual of Pharmacy*, pages 273 and 274, "are frequently the subjects of several diseases. . . . Diseases of the joints show themselves by what appears to be a distension of the bursæ; a small fluctuating tumour first presenting itself which contains a fluid resembling synovia; this becomes viscid, and at last forms a nidus for the deposition of bony matter. . . . The knees of horses, and the knees and hocks of cows, are the joints most commonly attacked." A gentleman in South Wales, a keen fisherman himself, has told me that he has reason to think that mineral poison has similar effect on the bones of fish. He has certainly taken in the immediate neighbourhood of a lead mine fish so misshapen that it is difficult to account for their abnormal growth on any hypothesis except that of disease. I do not, of course, insist on the truth of my informant's theory, but I mention it as worthy of consideration.

My attention was directed, on a visit I paid last September to the Dart, to the serious injury resulting to that river from the Vitfor Mine on Dartmoor; and I consequently determined on inspecting it. The day proved unfortunately very unsuitable for the inspection; as heavy rain fell continuously, and the brook into which the mine water is discharged was consequently discoloured by the washings from the roads which are repaired entirely with the soft "metal" taken from the mine. I pointed out, as well as under the circumstances was possible, the remedies which seemed most likely to succeed; but I am afraid that the mine water, which does not apparently contain any actual poison in the strict sense of the term, will be always so discoloured as to seriously affect the fishing interest of one of the most improving rivers in the country.

The other mines to which I ought perhaps to refer in this report are the South Caradon on the Seaton, a small river in the Fowey district; and the Trewetha Mine on the Tidi, a tributary of the Tamar. The first is so poisonous that near the mouth of the river it has actually destroyed acres of lowland which have from time to time been flooded by the water. The proprietors of this land more than 20 years ago brought an action against the mine company, and succeeded in obtaining on arbitration the value of the fee simple of the land which was destroyed. But such a result is, on public grounds, to say the least, unsatisfactory. The country is permanently poorer from the loss of a considerable extent of good land, and the fisheries of a pretty little stream are wholly destroyed. The pollutions from the Trewetha Mine are perhaps less poisonous; but the fine sand or slime which is perpetually washed down from the dressing floors is, if the evidence that has been submitted to me may be relied upon, gradually lessening the depth of the channel and seriously interfering with the navigation of the estuary. I have seen since my visit the leading members of the company, and have urged on them the propriety of taking steps to remedy the evil; and I have drawn the pointed attention of the Rivers Pollution Commissioners to the circumstance in the hope that they may be able to deal with the case in the report on mining industry which I understand they will shortly issue.

Active efforts have been again made during the past year to remedy the serious pollutions on the Teign, and I have promised the Conservators to go down in the ensuing spring to see if it be possible, pending the report of the Pollution Commissioners, to adopt any measures to remedy the evil. I shall be glad if the efforts of the Conservators meet with success, as the Teign is, physically speaking, one of the very best rivers in Devonshire, and it is consequently a serious misfortune that the produce of so fine a stream should be absolutely destroyed by the injurious effects of mine pollution.

I have dealt at some length with the growing evil of mines, because the danger connected with them is so great and so imminent that it seems desirable to lose no opportunity of drawing attention to it; but I do not know that it would serve any useful purpose if I were to deal in similar detail with the numerous instances of pollution from factories which I have met with in my inspections during the last 12 months. I refrain from doing so with the more readiness that I may have room for some observations on one case in which I have taken some little trouble, and which affords an excellent illustration of the defects in the present law. Factories.

My attention was directed early in the autumn to the serious injury resulting to one of our best rivers, the Dee, from the numerous petroleum works which have lately been opened in its watershed. One of them at Saltney in the estuary I had occasion to inspect some few years ago; but still more serious mischief was imminent on the Alyn, an important tributary joining the Dee near Holt. I personally inspected the stream in November last. At Rossett, a few miles from its junction with the Dee, and 20 miles from the nearest oil-work, the smell and taste of the tar in the water were distinctly perceptible. The miller at Rossett assured me that after floods fish were continually killed and washed down to him from the river above. The state of things grew worse and worse as I ascended the river till I reached the junction of the small stream on which two of the works are situated. Here, however, arose the chief difficulty to be encountered. The two works are situated about half a mile from each other. I found that the water below the lowest of them was so poisonous that a minnow placed in it sickened almost immediately, and was lying on its side at the bottom of the vessel in which the experiment was made in less than 10 minutes. But the water above the work was equally foul; and the foreman naturally insisted that as he received the water in such a state that fish could not live in it he could hardly be expected to return it to the river in a pure condition. It became, consequently, necessary to proceed to the higher of the two works; and here again a similar experiment was attended with a similar result; the fish was lying gasping on its side at the bottom of the vessel in about 10 minutes, and it actually died in a little over an hour. The remainder of the fish, which had been brought for experimental purposes, were placed in water

taken from above the works, and showed no signs whatever of discomfort or sickening. The Society for the Prevention of the Pollution of the Dee and its Tributaries determined on this evidence to proceed against the proprietor of the higher of the two factories; but in consideration for the circumstance that at the time of my visit he was obviously taking new precautions to remedy the evil, to press only for a nominal penalty. The case was heard at the Mold Petty Sessions on the 23rd January. The facts which I have stated were not disputed, but it was contended that the word "waters" in the latter part of the following section, "Every person who causes or knowingly permits to flow, or puts or knowingly permits to be put, into any *waters* containing salmon, or into any tributaries thereof, any liquid or solid matter to such an extent as to cause the *waters* to poison or kill fish, shall incur the following penalties," &c., could only in a penal sense refer to the "waters" in the first part of the same sentence, or those in which salmon were found. It was in other words insisted that the complainants were not entitled to a conviction unless they were able to show that the poison of the particular factory, against the proprietor of which the action was brought, would, if none other had existed in the neighbourhood, have rendered the waters of the Alyn poisonous to fish. A conviction could thus only be obtained by the production of evidence which under the circumstances of the case it was impossible to get. There would have been no difficulty in showing that fish in the Alyn were continually destroyed, and that at the moment when the complaint was made its water was poisonous to fish life. But the pollutions of the upper factory were, before they entered the stream, increased by similar pollutions from a similar work. A colliery discharged its ochreous water into the river a little way further down; it was absolutely impracticable to distinguish between the mischief occasioned to the river by each of these workings; and unless this distinction could be drawn it was impossible to obtain a conviction.

It may, of course, be pretended that this decision, which was only given in Petty Sessions, is erroneous, and that no amendment in the law is consequently necessary. But in the first place, it is evidently proper to regard the judgment of any court of law as good until it has been reversed; and, in the next place, I have reason to believe that, in the opinion of competent judges, the finding of the Mold Magistrates was sound; and consequently that, when two factories are situated on the same stream, and it is impossible to distinguish the mischief which they severally occasion, there is no possibility of obtaining a conviction against either of them under the 5th Section of the Salmon Fishery Act.

Notwithstanding then the decision of the Select Committee of 1870, and the very general opinion, which I partly share, that river pollution is too large a matter to be dealt with in a Salmon Bill, I most respectfully suggest that our Conservators are at least entitled to ask that the law of 1861 shall be made workable. It can be made so by a very simple modification, for which there is fortunately a sufficient precedent. The English Salmon Act limits the offence of pollution to those cases where the manufacturer "causes or knowingly permits to flow, or puts or knowingly permits to be put, into any waters containing salmon, or into any tributaries thereof, any liquid or solid matter to such an extent as to cause the waters to poison or kill fish." But the Scotch law is much broader: "Every person who causes or knowingly permits to flow, or puts or knowingly permits to be put, into any river containing salmon any liquid or solid matter poisonous or deleterious to salmon," is made liable to certain penalties. In England then there is no remedy for the pollution of a stream under the Salmon Act unless it results in the actual poisoning of fish. In Scotland, on the contrary (where a river, it must be remembered, is defined to include its tributaries), the mere placing any poisonous matter in any tributary is an offence. The difference between the two laws is very remarkable. The manufacturing industry of part of Scotland is hardly less important than that of this country; so that the different circumstances of the two kingdoms cannot be cited as satisfactorily accounting for the discrepancy between the two laws. I am surely therefore justified in contending that a remedy which has been granted to the Scotch should be accorded equally to the English; and that some amendment should at once be made in the section of the English Act which, as it stands, is nearly if not entirely inoperative.

WEIRS.

The pollution question, it will be gathered from these remarks, is at least as urgent as ever. Continual attention is gradually remedying the evil from weirs. I have had occasion during the last season to insist in two cases that fishing should be discontinued at weirs where its continuance was obviously illegal. The first was at a weir on the Yealm, which at the time of a former visit was covered by so high a tide that I was unable to inspect it, but which I understood, on what appeared sufficient authority, to have been legally constructed. I found, however, on an inspection last year that very great alterations were required before it could legally be used, and I accordingly gave

the necessary directions for its disuse until these alterations are made in it. The proprietor of the weir has, in consequence, determined on abandoning his fishery, which was only of small value. The second was at the Netstakes weir on the Tamar. This dam is used partly for navigation, and partly for fishery purposes, and is, technically speaking, a fishing-mill-dam. It has, however, no sufficient fish pass attached to it, and is in other respects illegal for fishing purposes. As last year the proprietors contemplated resuming the right of fishing which they had abandoned since 1861, it became my duty to explain to them the alterations which were required before the dam could be legally used. They at once expressed their readiness to be guided by my decision, and to desist from their intention to resume their fishing. I have since urged on the Conservators the propriety of attaching a sufficient pass to the dam, which is the greatest obstacle on the Tamar; but they are, perhaps naturally, so much more concerned with the far greater danger—pollution from lead mines—which they have to encounter, that it is perhaps unreasonable to expect them to deal with the lesser evil till there is some prospect that the greater one will be remedied.

Passes have been erected during the past year at Penarth on the Severn, at Llanthony, a new weir on the same river, and at the weir on the Yarty, the chief spawning tributary of the Axe, to which I have alluded in my previous Reports. The first of them became necessary in consequence of the destruction by a high flood of the secondary weirs, which were originally built below it to facilitate the passage of fish. The present pass consists of a series of pools, gradually increasing in size from the top to the bottom, constructed round the left side of the weir. The gradient is very easy, the rise from pool to pool never exceeding $10\frac{1}{2}$ inches. The pools are themselves large, and fish have been seen to swim with ease through the pass. The weir at Llanthony, one of the new navigation weirs near Gloucester, is not of itself a very serious obstacle. The pass which has been attached to it, on the recommendation of my colleague and myself, has been designed to localise the water in one part. It consists of a diagonal groove constructed on the apron of the weir, and I believe amply answers every purpose which can possibly be required of it. The pass on the Yarty is constructed on what is technically known as the pool principle. It has been erected too lately to make it possible to pronounce a very definite opinion on its merits, but it will probably be found ultimately necessary to take some precaution for reducing the volume of water which now enters it at a time of flood.

Besides these passes, which have been actually built under my own supervision during the last year, it has been found necessary to construct a new pass, which has been approved, in Newton canal weir on the Usk, the original one having fallen into disrepair. The pass on the Senni, a tributary of that river, has been approved. Some further modifications have been made in the pass at Clitheroe on the Ribble. The pass at Maisemore on the Severn will be erected during the present summer; the plans for it have been already decided on, but the weir itself has not hitherto been sufficiently completed to necessitate the erection of a ladder. Negotiations are being carried on, which it is hoped will be embodied in the new Bill, for the erection of a new pass at each of the navigation weirs on the Severn. There is some prospect of steps being taken for the opening of the Kent. The Dart Board have formally resolved on the plans for the new pass at Totnes. Alterations will be made in the ensuing season in the pass at Latchley on the Tamar: and, though the pass at Trecastle has not been actually constructed, the Usk Board have assured me that they are satisfied that it will be built during the ensuing spring.

Two other passes, constructed during the past year at Wetherby and Tadcaster on the Wharfe, deserve more detailed notice. The weir at Wetherby is a perpendicular dam, eight feet in height, constructed to work a valuable corn-mill, the property of the Leeds Corporation. The weir at Tadcaster is about seven feet six inches high, but from the peculiar wave like form of its construction is at least as great an obstacle as that at Wetherby. The pass at Wetherby has been constructed round the proper right of the dam; that at Tadcaster in an old waste hatchway near the proper left of the dam. The first of these passes was erected by the Corporation of Leeds at a cost which, I am told, amounted to 600*l*. It requires consequently no arguments to show that the dams of this country cannot be generally remedied in a similar fashion on account of the expense. The pass is of great solidity and has considerable merit. It is divided into six pools, each of which is about eight feet square, with the exception of the top pool, which is nine feet by eight feet, and the two at the bottom, which are what Euclid would have called "trapeziums." Each pool is nearly three feet deep; the rise from one to the other is less than 15 inches, and the opes or openings at the alternate sides of each pool are one foot square. The pass at Tadcaster is divided into five pools, the four highest being nine feet six inches by a little less than eight feet long. The bottom one is two feet longer than

the others, but has one of its corners cut off. The pools at Tadcaster are not more than 18 inches deep, and the rise from pool to pool is no less than 18 inches. Both passes are therefore considerably steeper than that constructed at the same time under my colleague's and my own supervision last year at Penarth; and as I believe the efficiency of a pass increases as its gradient decreases, I conceive that at Penarth to be preferable in this respect to either of them. The pools at Wetherby are three feet, at Penarth two feet, and at Tadcaster 18 inches deep. In this respect therefore Wetherby has a decided advantage over Penarth, while Tadcaster is inferior to both the others. The extra depth of the pools at Wetherby may, notwithstanding its steeper gradient, deservedly place the pass at that dam on a par with that at Penarth. It is a matter of sincere regret to myself that at Tadcaster the pools should have been made so shallow, and the rise from one to the other so steep, that, though the pass will be available for strong fish in light water, I conceive that gravid fish in heavy water will be unable to swim up it.

There is one feature, however, about both these passes which still requires to be mentioned. In each of them a two-foot opening has been made in the highest step, capable of being closed at the will of the miller, who has the key of it. At Wetherby at the time of my inspection, though abundance of water was running to waste over the dam, I found this opening closed; sufficient water was, however, flowing over the top step of the pass to make it easily practicable for fish. It seems then obvious first, that the pass would be as efficient without the opening as with it; and second, that no dependance can be placed on a miller's opening and shutting the sluice as the water in the river rises and falls. It may be thought that the difficulty can be obviated by resorting to some contrivance by which the sluice can be raised or lowered by the action of the water itself, without the intervention of the miller. Designs for such an apparatus were, it will be remembered, exhibited both by Mr. Paterson and Mr. Brady before the Select Committee of 1869-70. But unfortunately, experience at Tadcaster has proved that the sluice cannot practically be made self-acting. An expenditure of, as I am told, no less than 80% was incurred there in order to effect this object; but though the contrivances applied for this purpose were ingenious they wholly failed to open the sluice, and Tadcaster, like Wetherby, is dependent on the will of the miller.

So far I have been considering the passes which have either been built or approved during the past year. It may perhaps be desirable to refer for one moment to some of those which in previous years have been constructed. I was glad to learn on the occasion of a visit paid to the Leven last spring that the inexpensive passes which, subsequently to my inspection of that river in 1868, were attached to the dams on that river had answered every purpose. "One of the best things out is yon," the water-bailiff said to me, pointing to the diagonal board which has been placed on the dam at Lowood, at a cost of only 8%. That the water-bailiff's opinion is not ill-founded may be gathered from the circumstance that 15 or 16 fish have been taken in Windermere with the rod, so there is at last some prospect of its becoming an angling lake. It is the fashion to condemn any remedy that happens to be cheap, but cheapness is surely an additional recommendation of an effective remedy.

It seems then impossible to deny that the weir difficulty, if I may use the phrase, is being gradually removed. Indeed I am one of those who are disposed to think that the work of opening our streams is in some instances being carried on too rapidly. To pass the fish into a country where there is no machinery for protecting them is obviously to throw temptation into the way of poor men, which they may find it difficult to resist. It is wiser to confine the fish to a limited area, over which it is easy to maintain an adequate supervision, than to allow them to disperse themselves over an extended country, which can, at the best, be only occasionally visited by the one or two bailiffs it is possible to keep. Conservators would do well to confine their attention in the first instance to one or two of the best tributaries, and gradually enlarge the sphere of their operations as an increasing production and a growing revenue enable them to maintain a larger staff. If this view be correct, power to exclude the fish from those streams where they are nearly certain to be destroyed is almost as much required as to open those dams which they can only with difficulty pass. Such a power as that which I am contemplating has been actually conceded by the legislature to Scotland, and might, I think with advantage, be entrusted to the Conservators in this country. But, at the same time, I am far from denying that fresh powers are needed to enable the Conservators to deal with difficult or insurmountable dams. All fishery reformers are, I think, now agreed that in certain cases and with certain limitations power should be given to take dams by compulsory purchase; but a remedy of this description can evidently be only used on very rare and exceptional occasions, and for ordinary purposes some amendments ought

to be made in the sections of the Salmon Act, which enable passes to be attached to weirs. The defects in these sections are not indeed so great as their detractors assume. At the present moment, (1) a proprietor of a fishery has power under the 23rd Section of the Salmon Act, 1861, with the consent of the Home Office, to attach a pass to any dam, and the only condition to which he is subject is the fair one that no injury shall be done to the weir owner; and (2) any person building a new dam in a salmon river is compelled under the 25th Section to attach to it a pass of such form and dimensions as the Home Office may approve. Nothing can be better than the spirit of these two provisions; it is only necessary, in order to make them efficient, to introduce comparatively slight amendments in them. There are two faults in the last of these Sections which require remedying. The first is that the Section applies only to new weirs, and does not refer to the obstructions which experience has proved may be made by quarrying in the bed of a river; the second, that as penalties imposed by the Salmon Act can only be recovered within six months after the commission of the offence, and the offence of erecting a new weir in remote neighbourhoods is frequently not even discovered for many months after the weir is completed, it seems possible that there may be some difficulty, unless the offence be made a continuing one, in recovering the penalty at all.

The objections to the 23rd section are still more numerous. In the first place, the power of building a pass with the consent of the Home Office is not apparently given to any one except the proprietor of a fishery. It ought clearly to be extended to Boards of Conservators. In the next place, a right of way must be given over adjacent lands to the persons authorized to build the pass, or the power itself may be nugatory. In the third place, the Home Office should have a retrospective power of confirming passes that have been built, and not merely a prospective one of approving those which are about to be built. In the fourth place, when a pass is approved by the Home Office no one should be allowed in any way whatever to interfere with its efficiency. And in the fifth place, the erection of a pass under the 23rd or the 25th section of the Salmon Act, should in no case confer a right of fishing either immediately above or below the dam.

These are the amendments which the experience of the last five years proves to be necessary in these sections. A much more formidable remedy is, however, sometimes demanded. A special tribunal, the Special Commissioners of English Fisheries, should, it is insisted, be empowered to inquire into the legality of every dam in the kingdom. As I believe that I am usually thought to be opposed to this proposal, I may, perhaps, take this opportunity of saying that if the duties of the Commissioners are confined to the judicial functions of a court of law, I am personally prepared, with two reservations, to give the proposition any little support it may be in my power to afford it. Nor are these reservations of my own making. The first of them, which was suggested by the Select Committee of 1870, is that the Commissioners should only act on the application of the local authority, and not *ex proprio motu*. The second of them, which was suggested by Mr. Paterson, the chairman of the Special Commissioners, is that the decisions of the Commissioners should carry costs, and involves the existence of two parties to each suit before them. As this provision was pronounced on Mr. Paterson's high authority to be desirable, I saw with some surprise that the amendments to the Bill which were introduced to give effect to it last year by Mr. Winterbotham, the Under Secretary of State, were treated in certain newspapers as a direct attack on the existence of the Commissioners themselves. It must surely be obvious to every one that Mr. Paterson is quite right in saying that the costs of an action before a special tribunal should follow the verdict, just as they do in an ordinary suit; and I consequently sincerely trust that, whether the powers of the Special Commissioners be extended or not, the provisions of which Mr. Winterbotham gave notice, and which were copied, I believe, almost literally from the Common Law Procedure Act, may become law. Mill-owners and fishery owners will then be protected from vexatious litigation by the surest of all safeguards, the liability of their opponents to costs, in accordance with the wise suggestion of the chairman of the Special Commissioners.*

* Vide Report of Select Committee of 1869, Questions 1355-6 :—

"1355. Reference has been made to the hardship of a person having to come before you to support his claim to any fishing weir or fishing mill-dam or fixed engine, and it has been suggested that such persons would rather have their cases tried elsewhere, in order that they might obtain their costs if they proved to be in the right. Do you see any reason why an Act of Parliament should not enable a special commissioner to award costs in certain cases where there is any frivolous or vexatious opposition to a claim?—I think such a power would be very desirable.

"1356. Take the Dinsdale case; if any vexatious opposition had been offered to this claim, might you not have the same power to award costs as the judges have in the superior courts?—I think that would be a very proper power to invest the commissioners with; and justices have the power in more trifling matters. It would cut both ways, and of course both parties would be equally liable to have it exercised upon them."

BYELAWS.

I can hardly close this Report without referring to one other matter in which fresh legislation is required, though the frequency with which this branch of the subject has of late years been discussed makes any extended reference to it on my part unnecessary.

Since attention was first directed to the necessity for giving greater elasticity to some of the provisions of the law, the demand for byelaws has been continually growing. The original suggestion, that the close season should be adapted to the requirements of each river, was denounced in some quarters as offending the main principle on which the Act of 1861 was founded. The contention that the same mesh was not applicable to every river seemed equally objectionable to those who rested their case on the uniformity which had been established in 1861. My colleague and I were denounced for proposing changes which our predecessors, with their more mature experience, were presumed never to have demanded; but the circumstance was overlooked that the very elasticity which we were desiring was originally contemplated by the framers of the Bill of 1861; and that the uniformity which was established then had really only resulted from Parliament having struck out some of the provisions which had been originally incorporated with this object in the Bill. To these matters it is however hardly necessary for me to refer in detail now. The necessity for byelaws was definitely established before the Committee of 1870; there is hardly a single fishery reformer by whom it is not recognized. But at the same time it may be well to remove one misapprehension. It seems to be assumed that the demand for byelaws has solely arisen among the upper proprietors from a wish, which my colleague and I are supposed to share, to restrict the operations of the net fishermen. If the gentlemen who entertain this opinion will do me the honour of referring to my previous Reports they will find that it is entirely unfounded. My argument for byelaws has always been based on a desire to extend the operations of legitimate net fishermen. In advocating them I have continually instanced the case of those rivers which fish do not enter in any numbers till after the commencement of the present close season, and in which the present mesh is too large to enable the sea trout, peal, and sewin to be killed. I hope therefore that, whatever arguments may be used during the present Session against byelaws, it may not be urged that their object is to handicap the legitimate net fishermen. No doubt there are instances, where the instruments used by net fishermen are so destructive, and the use of them is so continual, that it may be desirable to place some limit to their employment; just as it was found necessary in 1861 to prohibit the use of certain peculiarly dangerous engines. But the restrictive legislation of 1861, so far from being burthensome to the net fishermen, has proved distinctly advantageous to them. It is indeed, as we have already seen, a common reproach that the net fishermen have monopolized the entire benefits derived from amended legislation. Precisely in the same way I have no hesitation in contending that well-considered restrictions now will confer on the net fishermen similar benefits to those which have been the direct consequence of the restrictions of 1861. Wherever fishing is carried on to an excessive extent, the consequences in the long run are perceptible in the diminished proceeds of the fishery. There can be no question that in some instances in this country fishing for salmon exceeds legitimate bounds. In those cases, to avoid any subsequent diminution in the profits, it is desirable to restrict it.

That such restrictions will necessarily tend to the greater produce of angling waters I do not affect to deny. On the contrary, I can see neither the policy nor the justice of saying that a fish driven by instinct to visit every part of each river should be taken in any considerable numbers only in one part of it. It should, I submit with deference, be the policy of the Legislature to endeavour to afford every proprietor some share in the profits of the fishery. Even under the most favourable circumstances, the landowner in whose water the fish are bred can never hope to obtain a large proportion of them. We may be quite satisfied that no salmon river can be prosperous in which he is denied all share in them.

It only remains for me to recapitulate the leading proposals which I have made in this Report:—

I. Boards of Conservators:—

1. The retention of the present nominees of Quarter Sessions.
2. The amendment of the present ex-officio qualification by giving every landowner with a certain extent of frontage, and every proprietor of a fishery of a certain value, an ex-officio seat on the Board.
3. The addition of a certain number of elected members representing the net fishermen.

II. Power to Boards of Conservators to make byelaws to affect :—

1. Close season.
2. Mesh of nets.
3. Size of nets.

III. An amendment of the 5th section of the Salmon Fishery Act, 1861, removing the necessity of proving that the waters in which salmon are found are poisoned by the pollution.

IV. An amendment of the present clauses affecting weirs :—

1. By giving Boards the power, now only expressly granted to proprietors of fisheries, of attaching passes to dams.
2. By giving the Secretary of State power to approve passes that have been made as well as those that are to be made.
3. By making interference with a pass so approved illegal.
4. By making the erection of a weir without a pass a continuing offence.

V. The provision of a compulsory power to purchase weirs.

VI. The provision of a power to prevent salmon ascending streams where there is no machinery for their protection.

VII. The extension of the power of the Special Commissioners to enable them to inquire into the legality of all obstructions in salmon rivers.

VIII. The enactment of the provision suggested by Mr. Paterson, the chairman of the Commissioners, that proceedings before them should always carry costs.

IX. The consequent provisions :—

1. That there should always be two parties to each suit.
2. That the Commissioners should only move on the application of the local authorities.

X. The extension of the power of water-bailiffs :—

1. With the express authority in writing of the Board in each case, to enter on land where there is cause to suspect the commission of illegal practices.
2. To stop and search boats suspected of containing illegal implements or fish illegally caught.

XI. The consequent provision that all boats used in salmon fishing should be numbered.

XII. The provision of minimum penalties for all offences.

These are in addition to the other amendments which a reference to my previous Reports will prove to be necessary. I have thought it best on the present occasion to refer to those only which have most prominence. I trust that I am not too sanguine in adding my hope that the present session may not pass without that attention being paid to our salmon fisheries which from their importance they deserve.

I have the honour to be, Sir,

Your obedient servant,

S. WALPOLE.

The Right Hon. H. A. Bruce, M.P.,
Secretary of State for the Home Department.

March 1872.

APPENDIX II.

SUMMARY of Number of Net Fishermen employed, and of Amount raised in License Duties in England and Wales in the Years 1867-71.

Year.	Number of			Total Men.	Revenue from			Total Revenue.
	Net Fishermen.	Rod Fishermen.	General Licenses.		Nets.	Rods.	General Licenses.	
1867 -	3,029	2,350	39	5,379	£ 3,851	£ 1,816	£ 430	£ 6,097
1868 -	3,913	2,076	29	5,989	4,921	1,593	330	6,844
1869 -	3,083	2,030	24	5,113	4,826	1,420	320	6,566
1870 -	2,977	1,616	23	4,593	4,757	1,240	269	6,266
1871 -	3,383	2,054	26	5,437	5,370	1,469	307	7,146

NOTE.—The numbers for the years previous to 1868 have, for the purpose of comparison, been corrected by the addition, to each, of the figures returned for the Eden district in 1870, the first year in which licenses were issued in that district.

APPENDIX III.

TABLE of DISTRICTS in which there has been an Increase in Number of Men employed in Net Fishing, and in Amount received for Net License Duties in 1870-71.

District.	1870.		1871.		Increase.	
	Men.	Amount.	Men.	Amount.	Men.	Amount.
Kent - - -	40	£ 80 s. 0 d. 0	43	£ 85 s. 0 d. 0	3	£ 5 s. 0 d. 0
Lune - - -	70	185 0 0	77	198 0 0	7	13 0 0
Ribble - -	174	500 0 0	209	585 0 0	35	85 0 0
Dee - - -	200	308 0 0	225	339 0 0	25	31 0 0
Conway - -	18	26 0 0	25	35 0 0	7	9 0 0
Teify - - -	208	188 0 0	238	212 0 0	30	24 0 0
Usk - - -	17	113 15 0	17	115 12 6	—	1 17 6
Wye - - -	166	374 0 0	180	386 0 0	14	12 0 0
Severn - - -	457	666 10 0	475	727 12 6	18	61 2 6
Avon, Brue, and Parret	16	42 0 0	18	46 0 0	2	4 0 0
Fowey - -	26	13 12 0	36	18 0 0	10	4 8 0
Avon (Devon) -	20	26 0 0	23	31 10 0	3	5 10 0
Dart - - -	80	100 0 0	96	120 0 0	16	20 0 0
Exe - - -	15	21 0 0	23	31 10 0	8	10 10 0
Axe - - -	17	25 0 0	21	30 0 0	4	5 0 0
Avon (Hants) -	80	60 0 0	120	90 0 0	40	30 0 0
Wharfe - - -	69	115 0 0	75	125 0 0	6	10 0 0
Tyne - - -	494	705 0 0	665	950 0 0	171	245 0 0
Coquet - - -	42	75 0 0	96	165 0 0	54	90 0 0
Total - - -	2,209	3,623 17 0	2,662	4,290 5 0	453	666 8 0

APPENDIX IV.

TABLE of DISTRICTS in which there has been a Decrease in the Number of Men employed in Net Fishing, but an Increase in Amount received for Net License Duties in 1870-71.

District.	1870.		1871.		Decrease.	Increase.
	Men.	Amount.	Men.	Amount.	Men.	Amount.
Towy - -	178	£ s. d. 163 10 0	159	£ s. d. 181 10 0	14	£ s. d. 18 0 0

APPENDIX V.

TABLE of DISTRICTS in which there has been a Decrease in Number of Men employed in Net Fishing, and in Amounts received for Net License Duties in 1870-71.

District.	1870.		1871.		Decrease.	
	Men.	Amount.	Men.	Amount.	Men.	Amount.
Eden - - -	156	£ s. d. 223 0 0	156	£ s. d. 194 0 0	—	£ s. d. 29 0 0*
Seiont - -	12	15 0 0	8	10 0 0	4	5 0 0
Dovey - - -	26	59 0 0	22	55 0 0	4	4 0 0
Cleddy -	14	11 10 0	6	3 0 0	8	8 10 0
Taw and Torridge -	146	199 0 0	138	189 0 0	8	10 0 0
Camel - -	8	8 0 0	6	6 0 0	2	2 0 0
Trent - - -	52	80 0 0	50	76 0 0	2	4 0 0
Derwent - -	38	62 0 0	33	53 0 0	5	9 0 0
Total - -	452	657 10 0	419	586 0 0	33	71 10 0

* This decrease is due to the circumstance that the owners of certain fisheries who took out licenses for their instruments in 1870 fished under general licenses in 1871. The general license revenue rose consequently from 12*l.* to 85*l.*, vide Appendix I.

In the seven other districts, the Clwyd and Elwy, the Tamar, the Teign, the Otter, the Frome, the Stour, and the Tees the Returns for the two years are identical.

APPENDIX VI.

AMOUNT OF LICENSE DUTIES paid on different Instruments used for the Capture of Salmon in the various Districts of England and Wales in the Year 1871.

District.	V. Weir, " Hang," or Baulk.	Box Crib, or Crulve.	Fishing Basket.	Pole Net.	Stop Net.	Draft or Hang Net.	Pole or Bake Net.	Stream Net.	Baulk Net.	Coracle. Net.	Beating or Shackle Net.	Hand, Bow, or Dip Net.	Lave, Wade, or Haaf Net.	Putia.	Putchers per 50.	Outrigger or Leader.	Otter or Leth.	Gross Line.	Rod.
Eden	£	10	£	2	£	5 0 0	£	17. 2l. or 8l.*	£	2 0 0	£	£	£ 1	£	£	£	£	£	£ s. d.
Kent	—	—	—	—	—	5 0 0	—	—	10	2 0 0	—	—	—	—	—	—	—	—	1 0 0†
Lane	10 0 0	—	—	—	—	5 0 0	—	—	—	—	—	—	3	—	—	—	—	—	0 10 0
Ribble	—	—	—	—	—	5 0 0	—	—	—	—	—	—	—	—	—	—	—	—	1 0 0
Dee	—	—	—	—	—	5 0 0	—	—	—	2 0 0	—	—	—	—	—	—	—	—	0 10 0**
Clwyd and Elwy	—	—	—	—	—	5 0 0	—	—	—	—	—	—	—	—	—	—	—	—	1 0 0
Conway	3 0 0	—	1	—	—	3 0 0	—	—	—	2 0 0	—	—	—	—	—	—	—	—	1 0 0†
Seint	—	—	—	—	—	5 0 0	—	—	—	—	—	—	—	—	—	—	—	—	1 0 0
Dovey	—	—	—	—	—	5 0 0	—	—	—	—	—	—	—	—	—	—	—	—	1 0 0
Teifi and Ayrton	—	—	—	—	—	5 0 0	—	—	—	2 0 0	—	—	—	—	—	—	—	—	1 0 0
Cleddy	—	—	—	—	—	5 0 0	—	—	—	1 0 0	—	1 ||	1	—	—	—	—	—	0 10 6
Towy, &c.	—	—	—	—	—	5 0 0†	—	—	—	2 0 0 §	—	—	—	2 6	—	—	—	—	1 0 0
Uak	—	—	—	—	5	—	—	—	—	—	5	—	—	—	1	—	—	—	1 0 0†
Wye	—	—	—	—	3	5 0 0	—	—	—	2 0 0	—	—	1	2 6	—	17. & 2l.	—	—	0 10 0
Severn	10 0 0	—	—	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avon, Brue, &c.	10 0 0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Taw and Torridge	6 0 0	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Camel	—	—	—	—	—	2 0 0	—	—	—	—	—	—	—	—	—	—	—	—	0 10 6
Fowey	—	—	—	—	—	2 0 0	—	—	—	—	—	—	—	—	—	—	—	—	0 5 0†
Tamar and Plym	—	7	—	—	—	3 10 0	—	—	—	—	—	—	—	—	—	—	—	—	0 5 0
Avon (Devon)	—	—	—	—	—	5 0 0	—	—	—	—	—	—	—	—	—	—	—	—	0 7 6
Dart	—	—	—	—	—	5 0 0	—	—	—	—	—	—	—	—	—	—	—	—	1 0 0
Teign	—	—	—	—	—	5 0 0	—	—	—	—	—	—	—	—	—	—	—	—	1 0 0†
Exe	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Otter	—	—	—	—	—	3 10 0	—	—	—	—	—	—	—	—	—	—	—	—	—
Axe	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Frome	—	—	—	—	—	5 0 0	—	—	—	—	—	—	—	—	—	—	—	—	1 0 0
Avon (Hants)	—	—	—	—	—	5 0 0	—	—	—	—	—	—	—	—	—	—	—	—	1 0 0
Stour	—	—	—	—	—	3 0 0	—	—	—	—	—	—	—	—	—	—	—	—	1 0 0
Trent	—	—	—	—	—	5 0 0	—	—	—	—	—	—	—	—	—	—	—	—	1 0 0
Wharfe	—	—	—	—	—	5 0 0	—	—	—	—	—	—	—	—	—	—	—	—	0 10 0**
Derwent	—	—	—	—	—	5 0 0	—	—	—	—	—	—	—	—	—	—	—	—	—
Tees	—	—	—	—	—	5 0 0	—	—	—	—	—	—	—	—	—	—	—	—	1 0 0
Tyne	—	—	—	—	—	5 0 0	—	—	—	—	—	—	—	—	—	—	—	—	1 0 0
Coquet	—	10	—	—	—	5 0 0	—	—	—	—	—	—	—	—	—	—	—	—	1 0 0

* Amount depending on length of net.
§ Raised from 1l. 10s. in 1870.

† In these districts a few rod licenses were issued at lower rates for short periods.
|| Raised from 15s. in 1870.

‡ Raised from 3l. 15s. in 1870.
** Reduced from 1l. in 1870.

APPENDIX VII.

RETURN of the Number of Watchers employed in the various Districts for the protection of the Salmon Rivers.

District.	Permanent Watchers.	Temporary Watchers.	Total Watchers.	REMARKS.
Eden - - - -	5	—	5	
Kent - - - -	1	5	6	
Lune - - - -	3	3	6	
Ribble - - - -	10	3	13	
Conway - - - -	4	11	15	
Seiont - - - -	2	2	4	
Teify - - - -	3	3	6	
Usk - - - -	7	8	15	
Wye - - - -	4	25	29	
Severn - - - -	17	12	29	
Avon, Brue, and Parret -	1	—	1	
Taw and Torridge - -	2	4	6	All county police.
Camel - - - -	1	—	1	
Fowey - - - -	—	2	2	
Tamar and Plym - -	3	2	5	
Avon (Devon) - -	1	3	4	
Teign - - - -	—	—	—	
Exe - - - -	1	1	2	
Otter - - - -	—	—	—	
Axe - - - -	1	—	1	
Frome - - - -	—	—	—	
Avon (Hants) - -	1	—	1	{ A small payment is also made to the meadow downers who take care of the spawning grounds.
Trent - - - -	1	—	1	
Wharfe - - - -	1	1	2	
Derwent - - - -	1	—	1	
Tees - - - -	5	—	5	{ The Board contract with the county police, and five men are generally employed, at a cost of 312 <i>l</i> . Six of these are police constables.
Tyne - - - -	8	—	8	
Total - - - -	83	85	168	

In addition to the above, the following Districts give the number of watchers employed without distinguishing between those permanently and temporarily engaged :—

Clwyd and Elwy - - - -	3	Dart - - - -	4
Dovey - - - -	6	Stour - - - -	4
Cledy - - - -	1	Coquet - - - -	5
Towy - - - -	4		

giving a total of 27 more. Assuming that half of these men are engaged permanently and half temporarily, (the proportion in those districts where the distinction is made) the numbers will be :—

Permanent watchers - - - -	96	Temporary watchers - - - -	99
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or a total of 195 watchers either continuously or temporarily employed.
No return is made by the Dee Board.

APPENDIX VIII.

COMPARATIVE RETURN of the Number of Prosecutions and Convictions under the Salmon Fishery Acts, in each District, for the years 1870-71.

District.	1870.		1871.		REMARKS.
	Charges.	Convictions.	Charges.	Convictions.	
Eden - - -	27	22	32	24	One withdrawn.
Kent - - -	3	3	6	4	
Lune - - -	11	9	6	6	
Ribble - - -	19	16	16	11	
Dee - - -	31	24	65	38	One withdrawn on payment of costs. Summons not served in four cases. Defendant absconded and warrant granted in one case. Seven cases withdrawn. Three cases adjourned. Three cases withdrawn on payment of costs.
Clwyd and Elwy - -	6	3	5	5	
Conway - - -	2	2	1	1	
Seiont - - -	3	3	16	16	
Dovey - - -	16	16	8	6	Several other prosecutions not returned.
Teify - - -	32	31	25	22	
Cledydd - - -	15	8	6	—	Standing over for counsel's opinion.
Towy - - -	29	22	19	17	
Usk - - -	40	38	60	50	Two withdrawn.
Wye - - -	35	33	31	28	
Severn - - -	28	20	27	21	Four withdrawn ; in two cases the defendant absconded.
Avon, Brue, &c. - -	2	2	—	—	
Taw and Torridge -	22	18	35	35	One adjourned.
Camel - - -	3	3	7	6	
Fowey - - -	3	3	—	—	
Tamar - - -	2	1	—	—	
Avon (Devon) - -	11	11	12	12	
Dart - - -	9	7	13	10	
Teign - - -	—	—	—	—	
Exe - - -	1	1	—	—	
Otter - - -	—	—	—	—	
Axe - - -	1	1	—	—	
Frome - - -	4	3	—	—	
Avon (Hants) - -	—	—	—	—	
Stour - - -	—	—	—	—	
Trent - - -	2	—	6	5	
Wharfe - - -	8	8	7	7	
Derwent - - -	—	—	2	2	
Tees - - -	21	17	10	8	
Tyne - - -	18	14	17	11	
Coquet - - -	4	3	—	—	
Total - - -	408	343	432	345	

APPENDIX IX.

SUMMARY of the Number of Prosecutions and Convictions under the Salmon Fishery Acts in the years 1867-8-9-70-1.

	1867.	1868.	1869.	1870.	1871.
Prosecutions - -	260	413	381	408	432
Convictions - -	197	328	304	343	345

GENERAL APPENDIX.

QUESTIONS FORWARDED BY THE INSPECTORS OF SALMON FISHERIES TO THE BOARDS OF CONSERVATORS.

1. Has the take of fish increased or diminished? What are the causes to which you attribute such increase or diminution?

2. Can you give any idea of the number of fish caught in the district—(a) with net, (b) with rod?

3. Have any new weirs been built or old weirs altered in your district in 1871? If so, have passes been attached to them?

4. Have any passes been built in 1871, or old passes been altered? And have the new passes or the alterations proved successful?

5. Have any new mines, paper or other factories using deleterious substances been opened on your river in 1871, or has any new substance, poisonous or deleterious to salmon, been poured into your river?

6. Were any steps taken in 1871 to prevent pollution from mines and factories, or sewage from towns, from entering your rivers; and have such steps proved successful?

7. What instruments for the capture of salmon were licensed in 1871? How many of each of these instruments were licensed? How many of these are usually used in private and how many in public waters? How many men are required to work each of them?

8. Have any "general" licences been issued? If so, how many? And what is the amount of revenue raised in this way?

9. Have any prosecutions been instituted under the Salmon Acts? For what offences were they instituted? What has been their result? If failure has occurred, state the cause.

10. State the number of watchers permanently and temporarily employed in your district.

11. Have any gratings been attached to mill-lades or other artificial channels? Are they effective?

12. Are there any points, either in the practical management of the fisheries of your district, or as regards future legislation, to which you desire to draw the attention of the Inspectors?

ANSWERS TO THE FOREGOING QUESTIONS.

EDEN DISTRICT.

1. Increased. Attributable to the better supervision of the Fishery District, and protection of the old and young fish in the upper waters.

2. No.

3. No.

4. No.

5. No.

6. Yes. Letters were written to the owners of the paper works near Warwick Bridge and to the managers of the Carlisle Gas Works respecting refuse liquid run into the rivers, and assurances received from them that every care should be taken to prevent such pollution of the waters.

7. Public waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Haaf net	71	£ 1	1
Poke net	4	2	1
Hang or draft net	1	5	From 2 to 6

Private waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Rod and line	97	£ s. d. 1 0 0	1
Do.	36	0 12 6	1
Do.	1	0 10 0	1
Do.	24	0 5 0	1
Other	7	3 0 0	1
Coracle net	2	2 0 0	1
Hang or draft net	17	5 0 0	2 to 6

8. Two. 85l.

9.

Offences charged.	No. of defendants in each case.	Convicted.	Acquitted.	Penalty, if convicted, on each defendant.
Using a gaff for taking salmon	1	1	—	2l. 10s.
Do. do. . . .	1	1	—	4l.
Do. do. . . .	1	1	—	5l.
Do. do. . . .	1	—	1	Evidence not sufficient.
Fishing with roe for salmon	1	1	—	10s.
Do. do. . . .	1	1	—	2l.
Do. do. . . .	1	—	1	Facts not proved.
Having salmon roe in possession	1	1	—	1s.
Do. do. . . .	1	1	—	2l.
Having unclean salmon in possession	1	1	—	5s.
Do. do. . . .	1	1	—	1l.
Do. do. . . .	1	1	—	2l.
Do. do. . . .	3	3	—	1s. each.
Having young of salmon in possession	1	1	—	5s.
Taking young of salmon (brandling)	1	—	1	Withdrawn.
Fishing for salmon in weekly close time by means other than rod and line	1	1	—	3s.
Using nets double or armoured for taking salmon	3	3	—	2l. each.
Do. do. . . .	1	1	—	2l. 10s.
Killing salmon in close time with nets	3	3	—	11l. 18s. 4d. each.
Using a spear for killing a salmon	3	—	3	Defendants having been fined full penalties in previous case.
Using a net without a licence	1	1	—	2l.
Using a rod without a licence	1	1	—	1l. 5s.

Two men were also prosecuted for taking fish other than salmon in the Solway with nets of an illegal mesh (under the Solway Act, 44 Geo. III.) Case dismissed, the evidence being insufficient.

10. Five permanently.

11. No.

12. With regard to future legislation. It is desirable that there should be an extension of the weekly close time at the mouth or lower end of the river Eden, so as to give the upper proprietors a chance of sharing the beneficial result, which at present is not afforded them; and it might be advisable to vary the weekly close time in different parts of the river. The provisions of the Act 25 & 26 Vict. cap. 114. (the Poaching Prevention Act) might be extended to salmon, char, trout and other kinds of fish. The power of searching persons suspected of committing illegal acts might be extended to water-bailiffs, and to all rivers and places adjoining or leading to or from rivers or places where such fish may be caught. The forfeiture of rods, &c. should be made to apply to offences committed against the 14th as well as against the 15th sec. of the Act 24 & 25 Vict. cap. 109. The regulations in 4th sub-section of 28th sec. of the said Act regarding fishing weirs, &c. should be made to apply to all salmon rivers during the weekly close time. For all offences committed against the Salmon Acts a minimum penalty for the first offence should be stated with cumulative penalties for each subsequent offence. Power should be given to Boards of Conservators to erect hecks in salmon rivers for the purpose of preventing salmon from running into rivers where there are no possible means for them to pass over certain dams and other obstructions, and in consequence of which they are often destroyed in towns, &c. while on their way to their spawning grounds. The revenues at present derived from licenses or other sources are entirely insufficient for the maintenance of an adequate number of watchers or constables efficiently to watch and protect the rivers within the district, and should be supplemented by a local rate or a grant out of the consolidated fund.

KENT, BELA, WINSTER, LEVEN, AND DUDDON DISTRICT.

1. Increased, if anything; owing to better preservation.

2. In our extended district, with the jealousy existing between the fishermen, we believe a correct estimate to be impossible.

3. Not that the Board is aware of.

4. None that the Board is aware of.

5. This year a paper mill at Penny Bridge on the Crake river, visited by Mr. Walpole, has become a great nuisance to the fishery.

6. In Kendal a scheme of sewage is being carried out, but has not as yet been so far developed as to be effective.

7. Public waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Baulk net	2	2 10	2
Draft net	10	5	3

Private waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Draft net	3	5l.	3
Rod and line	105	10s.	1

8. Three general licences have been issued at 5l. each.

9.

Offences charged.	No. of defendants in each case.	Convicted.	Acquitted.	Penalty, if convicted, on each defendant.
Fishing in weekly close time	2	2	—	5s.
Fishing without license	4	2	2	2l.

10. One almost permanently, and five others in the spawning season.

11. None.

12. Yes, to section 64 of the Act of 28 & 29 Vict. cap. 121. This section is defective. Fishing for, catching, or attempting to catch or kill trout is made illegal, but no penalty is provided, except for wilfully killing trout.

In a late case prosecuted by the Board an active and continued attempt to catch trout was proved, but not an actual killing or even catching of fish: and the Bench of Magistrates before whom the case was tried held that they had no power to inflict a punishment.

It is also considered desirable that the netting season for trout and char should close at the same period as the netting season for salmon, in order to avoid the pretext of netting for trout in the breeding streams, the real object being to capture the salmon.

This Board recommend the netting season for salmon to be kept open to September 14.

LUNE, WYRE, KEER, AND COCKER DISTRICT.

1. The take of fish increased considerably in the upper waters, but not so in the estuary. The heavy rains in June and July enabled the fish to ascend the weirs. Something is also due to the careful watching and protection of the river.

2. Not in the tidal waters. It is calculated that about 1,300 have been taken by net, starting from the fish weir upwards; and about 210 with rod and line. Generally speaking, the fish were of large dimensions.

3. None.

4. None.

5. None.

6. None.

7. Public waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Heave net	45	2 3	1
Hang nets	4	5	3
Draught net	2	5	3
Baulk	1	10	1

Private waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Draught net	4	2 5	3
Rod	77	1	1

8. General licenses; one of 15l., and one 10l.=25l. We are glad to say our annual income is gradually increasing.

9.

Offences charged.	No. of defendants in each case.	Convicted.	Penalty, if convicted, on each defendant.
At LANCASTER.			
Having illegal instruments in their possession	3	3	One in 2l., two in 1l. each, and costs.
Fishing with a heave net during the close season	1	1	1l. and costs.
At KIRKBY LONSDALE, WESTMORELAND.			
Taking smelts	1	1	1l. and costs.
At SEDBROUGH, YORKSHIRE.			
Putting lime in the river	1	1	1l. and costs.

10. Three permanent watchers; but at certain periods of the season we double our staff, or employ even more if it becomes necessary.

1. One at the Forge mill, Halton near Lancaster, which answers most satisfactorily.
12. In addition to the numerous suggestions we have ventured to make on former occasions, we think it very desirable that the use of a 5*l.* draft net licence should be limited to the lands belonging to the licensee, or the lands of persons who have themselves taken out a similar licence for the current season.

RIBBLE DISTRICT.

1. Increased. This is attributable to the wet summer, which kept the estuary fishermen out of the water and enabled salmon to get up the river, and to the better preservation of the river.
2. (a.) Heave or haaf nets in the estuary - - - 3,716
Drift or draft nets in the estuary 3,510
Draught nets at Preston - 1,500
Draught nets at Cuerdale - 300
Draught nets, Preston to Ribchester - - - 365
Draught nets, Ribchester to Clitheroe - - - 769
Draught nets Clitheroe to Settle - 151
Draught nets in the Hodder - 101

10,412

- (b.) Preston to Hacking Boat - 100
Calderfoot to Clitheroe - 9
Clitheroe to Settle - 66
In the Hodder - 27

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3. No.
4. No such passes have been made or altered.
5. Yes. Print works which had been closed for more than a year have been re-opened at Barrow near Whalley, on a tributary of the Ribble. Since they were re-opened all the fish in the brook have been destroyed.
6. No such steps have been taken.
7. Public waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Haaf net - - -	71	5 <i>l.</i> each	1
Draught net - - -	33	5 <i>l.</i> each	3

Private waters.

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Draught net - - -	13	5 <i>l.</i> each	3
Rod - - - - -	302	10 <i>s.</i> each	1

8. Six, realising 34*l.*
- 9.

Offences charged.	No. of defendants in each case.	Convicted.	Acquitted.	Penalty, if convicted, on each defendant.
1st. Taking unseasonable salmon - - -	1	—	1	—
2nd. Fishing with net without licence - - -	1	—	1	—
Taking the young of salmon - - -	5	4	1	3 fined 10 <i>s.</i> and costs; 1 fined 1 <i>l.</i> and costs.
Fishing in weekly close time - - -	1	—	—	Withdrawn on payment of costs.
Using a gaff - - - - -	1	1	—	Fined 5 <i>l.</i> and costs.
Fishing in weekly close time - - -	1	1	—	Fined 6 <i>l.</i> and costs.
1st. Fishing with net of less than 3 inches mesh - - -	2	2	—	Each fined 10 <i>s.</i> and costs.
2nd. Using fixed engine - - - - -	2	2	—	Do.
Fishing in annual close time - - -	2	1	1	1 fined 20 <i>s.</i> and costs.

10. Permanent, 10 ; temporary, 3.
11. No such gratings have been fixed.
12. The Board desire to reiterate the observations made by them in former replies to this question.
- In addition they would suggest that the police should be authorised to assist the water-bailiffs in preventing a breach of the salmon fishery laws where the water-bailiffs have reasonable cause to expect that resistance will be made and a breach of the peace committed.

DEE DISTRICT.

1. The take of fish by nets, there is every reason to believe, has greatly increased; this increase may be attributed to the fish passes, which, when the nets partially cease below Chester, and the autumn floods lift the fish over the Chester weir, enable them to ascend easily to the breeding grounds;—to the grating which has been fixed at the head of the Shropshire Union Canal, through which millions of salmon fry formerly found their way to destruction;—to the partial prevention of the destruction of salmon fry by small nets and the rods;—and to a certain small amount of protection to the breeding fish.
2. It is not possible to give any accurate account of the numbers of fish caught with the nets; the fishermen refuse to give any; but we know that the take of fish below Chester must have been very great, as evidence was given before the Chester bench of magistrates on the 14th August that a working fisherman employed by a net-licence holder was earning *as his share* as much as 2*l.* 10*s.* per week. The way in which the profits of a net licence are divided is as follows: The owner of the net, boat, and licence takes two shares of the amount realized by the sale of the fish taken, and the working fishermen take one share between them. Two men only are ‘required’ to work the draft net and boat; but as more than two men have of late been frequently or generally employed, we cannot tell whether the one share was divided only among two or more; but, supposing that it was divided only among two, and produced for them 2*l.* 10*s.* each per week, it shows what great quantities of fish were taken. The price of salmon in the local markets was much lower than formerly.
3. A weir has been greatly raised so as to cause at times a complete barrier to the ascent of fish. No fish pass has been attached to this weir, which is situated on the Dee near its outflow from Bala Lake. The Shropshire Union Canal Company, who have caused this increased obstruction to the passage of fish, have been called on to erect a fish pass, in accordance with the Act of Parliament, but have not yet complied.
4. None.
5. Some petroleum and paraffin oil factories have lately been reopened in 1871; and they, and the others, and vitriol works, continue to pour such immense and increasing quantities of poisonous liquid and solid matter into the Dee and its tributaries as to cause them to be polluted to a fearful extent, and unfit for fish or any animal life. The smell from the vitriol works extends frequently right across the estuary,—a distance of from five to seven miles.
6. A “Society for Preventing the Pollution of the Dee and its Tributaries” was formed last year; but, from want of funds and support, the society has hitherto failed to protect the salmon of the Dee or the inhabitants of Chester from the poisonous pollutions issuing from the works above alluded to, from paper mills, as well as the sewage of the city of Chester and other towns. Unless their increasing pollutions are prevented by amended legislation, the fisheries must be destroyed, as well as the health of the inhabitants who use the poisoned waters.

7. Public waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Draft net - - -	57	£ 5	3

It must not be supposed that because draft and coracle nets were the only nets licensed for the capture of salmon, other instruments were not used for that purpose. Stake nets and trammel nets were frequently used. The licensed draft nets were used in public tidal waters.

Private waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Rod and line - - -	15	£ 1	1
Coracle net - - -	27	£ 3	2

All the coracle nets were used in private waters above the tideway, by fishermen who are permitted by the owners of these waters to fish there and to sell the fish they take.

8. No.
9.

Offences charged.	No. of defendants in each case.	Convicted.	Acquitted.	Penalty, if convicted.
Assaulting water-bailiff -	8	4	2*	1 fined 20s. or 14 days; 1 fined 2l. or 1 month; 1 a month hard labour; 1 fined 10s. and costs.
Disturbing spawning bed	3	1	2	2s.; 2 dismissed on payment of costs.
Having unclean fish in possession.	4	3	1	1 fined 2s. 6d. for each of 3 fish; 1 fined 5l. for each of 3 fish; and 1 fined 3l. or 1 week for 1 fish.
Exposing unclean fish for sale.	1	1	—	3l. 10s. or 1 month.
Unlawfully taking and destroying young salmon	1	1	—	1l. for 11 fish, and rod and line forfeited.
Fishing in weekly close time.	25	16	6†	1 fined 5s. or 7 days; 7, 2l. each or 1 month; 7 fined 5l. each or 3 months; 1 fined 25s.
Fishing in annual close time.	2	—	2	—
Fishing without license -	5	1	2‡	10l. or 3 months.
Fishing within 50 yards of dam.	5	5	—	3, 25s. each or 1 month; 2, 5l. each or 3 months.
Using fixed engines - -	2	2	—	40s. each or one month.
Obstructing water bailiff, and refusing to allow boat to be searched.	1	1	—	5l. or 2 months.
Having spears in possession.	2	2	—	2l. each or 1 month (spears forfeited).
Selling fish in close season	4	1	—	2l. for each of 3 fish (fish forfeited).
Snatching for salmon -	4	—	4§	—

* In one case defendant did not appear, and a warrant was granted, in another the summons was not served.

† Summons not served in 3 cases.

‡ Two adjourned.

§ Withdrawn, as the Bench could not decide what was a snatch. And one man summoned to be bound over to keep the peace. Case adjourned.

10. The number varies. As many are employed as the income of the Board from licenses will allow. The Board is not able to employ enough watchers to prevent illegal fishing in all parts of the district. Much more money could be very profitably invested in more preservation, which would insure a great increase to the net licensees in the lower waters.

11. None have been attached, but they are much required, as great numbers of salmon are destroyed by running under the mill wheels. The mill owners ought to be obliged to maintain them, as it is owing to their having raised their weirs that the fish are induced to run under the mill wheels, and therefore the public property (in the fish) is damaged.

12. This Board would refer to their answer to this question last year, and would now only remark that, if these fisheries are to be expected to prosper, as the

wonderful capabilities of the river and its tributaries are fitted for, an immediate amendment of the present fishery laws is indispensable; the first and foremost amendment being the enactment of an extension of the weekly close time, and a prohibition of fishing near weirs, so as to give the fish more time and chance to get to the upper parts of rivers, and give the upper proprietors some share in them, and thereby insure their future co-operation in the preservation of the breeding fish;—without which this Board believes these fisheries must quickly revert to the miserable state they were in before 1861.

CLWYD AND ELWY DISTRICT.

1. Fish caught by netting have increased, owing to preservation.

Rod fishing has been very bad, owing to want of water until after commencement of close time.

2. We know of 550 caught with nets, and probably one third more have been taken. No account has been kept of rods, but not over half a dozen salmon have been taken by this means. A large number of mort from 1 to 3 lbs. have been taken chiefly with bottom fishing.

3. None.

4. No change has been made.

5. No.

6. No.

7. Private waters. The nets named below have occasionally been used in the sea :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Net - - -	9	£ 2	2
Rod and line - - -	26	£ 1	1

8. None.

9.

Offences charged.	No. of defendants in each case.	Convicted.	Penalty, if convicted, on each defendant.
Gaffing - - -	3	3	2l. and costs.
Using illegal net - - -	2	2	1l. and costs.

10. Three.

11. Will be fixed in the spring of next year.

12. At a meeting of Conservators it was resolved to request the Home Office to allow the fishing not to begin until 1st March instead of 1st February, as at present, and to keep it open until 30th November.

That any legislation should also include trout.

That the Conservators should have the power to refuse a licence to any one who had been convicted of illegal fishing.

CONWAY DISTRICT.

1. We cannot inform you what the take of fish has been during last season by nets, but have heard that, except in a few instances, it was very bad. The take of fish by rods has been *very bad*, one of the worst seasons ever known on the Conway. The succession of floods in June and July told much against most of the net fisheries, but no reason can be given for the bad rod fishing.

2. We cannot give you any idea of the number of fish caught by the nets, but, with the exception of one or two, have heard it has not been a good season. One net, however, high up in the tide-way took, we hear, an immense number of fish. This net is used in a part of the river where it is very narrow, and being much longer than the river is broad, entirely blocks the channel, and, excepting in very high floods or tides, sweeps out all the running fish and does the river great damage. The take by the rods

for the whole of last season numbers about 54 salmon in the Conway. We have heard of a good many *small fish* having been taken in the Lledr, but do not know the number, no account having been kept.

3. No.

4. No.

5. Some poisonous matter from a mine was poured into the river Llugwy, one of the tributaries of the Conway, but was at once stopped on notice being given to the offending parties.

6. No.

7. Public waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Weir	1	2	2
Draught net	1	3	2

Private waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Draught net	8	2s.	2
Coracle net	2	2s.	2
Fishing basket	1	1s.	1
Rod	10	1s.	1
Rod	27	From 1s. to 3s. and 10s. each.	1

8. No general licenses have been issued.

9. Yes; one for having possession of seven unseasonable salmon after the 1st of November. The person convicted was one of a gang of 25 to 30 persons (supposed to be quarrymen who came from Festiniog), and took off the spawning beds in the Lledr between 35 and 40 salmon. The keepers were quite powerless to prevent the salmon being taken, owing to the number of the poachers, and it was simply a piece of good luck in apprehending the prisoner that was convicted. It would be very desirable in the new Fishery Bill to include greater power for the bailiffs and police to act in such cases as these, and to punish the offenders more severely by imprisonment, in the way provided for night poaching under the Game Acts.

Offences charged.	No. of defendants in each case.	Convicted.	Penalty, if convicted, on each defendant.
Having in possession 7 unseasonable salmon	1	1	5s. for each salmon or three months imprisonment with hard labour.

10. The number of permanent watchers is four, but 10 or 12 extra watchers are employed during the spawning season.

11. No. It would be desirable to obtain power to erect a grating at Pertheos Bridge on the Lledr, to prevent the salmon ascending higher up the river than that point to spawn, as it then becomes very narrow, and the fish can be so readily taken when spawning.

12. We have again and again pointed out that all that is wanted as regards the Conway is a good supervision of the nets in the tideway, length and mesh to be taken into consideration; that all such nets, and the boats using them, should be marked and numbered; that the weekly close time should be lengthened, and that the open season for rods should be extended to the 15th November, a month or two being added to the close season in the spring when there are nothing but spent fish in the river. We beg to say that if this addition to the open season for rods was allowed at the end of the season, no gaff would be allowed, and all female fish heavy in spawn would be returned to the river. Unless something of this kind is done, and that soon, all interest in the preservation of the Conway will cease. As it

is at present, the open season for rods closes just when the finest run of magnificent clean fish come up the river; and there are two or three months open in the spring when we have nothing but spent fish, quite unfit for food, in the whole of the water.

SEIONT, GWRFAI, AND LLYFNI DISTRICT.

1. Increased. Caused by the greater facilities provided by the Board for fish ascending the river, by strict watching, and the successful prosecution of poachers.

2. No reliable return can be given.

In the river Seiont 61 salmon were known to have been taken by the rod. The rivers were very low during the summer, and only during the last three weeks of the season could salmon be taken with the rod.

3. None.

4. None.

5. None.

6. None necessary.

7. Public waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Net	2	5	4
Rod and line	13	1	1

Private waters. None.

8. None.

9.

Offences charged.	No. of defendants in each case.	Convicted.	Penalty, if convicted, on each defendant.
Taking the young of salmon	6	6	2 1s. and costs; 2 10s. and costs; 1 5s. and costs.
Fishing without a licence -	2	2	2s. and costs.
Attempting to gaff a salmon	2	2	5s. and costs.
Taking a salmon in mill race	2	2	5s. and costs.
* Disturbing spawning beds	2	2	2s. and costs.
Do.	1	1	2s. and costs.
	16	16	

* Defendants absconded to Cumberland, but were brought back and lodged in gaol.

10. Two permanently, and additional men put on in autumn and winter.

11. Yes. They are effective.

12. Yes. See preceding replies.

DOVEY, MAWDDACH, AND GLASLYN DISTRICT.

1. Yes. The cause is attributed partly to the water being more plentiful, and to the preservation.

2. No.

3. No.

4. No.

5. A lead mine is partially worked on the Mawddach, but it cannot be shown that any mischief has arisen therefrom, the works being very limited.

6. No, except some slime pits at the above works. It is now proposed to erect effective ones, according to Mr. Frank Buckland's plan.

7. Public waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Draught net	4	5s. each.	2

Private waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Draught net - - -	7	5l. each.	2

8. No.
9.

Offences charged.	No. of defendants in each case.	Convicted.	Acquitted.	Penalty, if convicted, on each defendant.
Attempting to take fish in close time - - -	8	6	2	14l. 12s. 6d., exclusive of costs.

There have also been several successful prosecutions for fishing without license and in private waters.

10. Six or seven only.

11. No.

12. No, except to make byelaws to alter the close period. Without this, preservation will probably cease, as those interested cannot now take fish at the only time real salmon are in the waters.

TEIFY AND AYRON DISTRICT.

1. The take of fish has increased to some extent. Strict preservation is the cause to which this increase is to be attributed.

2. It is impossible to give any idea of the number of fish caught either with rod or nets.

3. No.

4. No.

5. Some old mines have been reopened on the upper waters, but catch-pits have been made so as to render the waters issuing from them as little deleterious as possible.

6. With the exception of the catch-pits mentioned in the above answer, no other steps have been taken.

7. Public waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Draft net - - -	26	2	6
Coracle net - - -	41	2	2
Rod and line - - -	43	1	1

Private waters. None.

8. One at 5l.

9.

Offences charged.	No. of defendants in each case.	Convicted.	Acquitted.	Penalty, if convicted, on each defendant.
25 4 cases for fishing without a license. 4 cases for spearing salmon and using a gaff. 3 cases for fishing with fixed engine. 14 Cases for fishing during the weekly close time and during the annual close season.	One.	23	3	Various penalties from 5s. to 5l. were inflicted.

Failure occurred in 3 cases in detection, owing to the impossibility of thorough identification.

10. Three, with additional assistance at times.

11. No.

12. Only those mentioned in former reports.

EAST AND WEST CLEDDY DISTRICT.

1. Increased. But no comparison can at present be made, in consequence of the early closing time, as a large number of the salmon which were caught in October and November by the nets now escape, and the early fishing has not yet been sufficiently good to compensate for the loss.

2. About 70 salmon were taken in the Western Cleddy, and about the same number on the Eastern Cleddy, by rod and line.

3. No.

4. No.

5. No.

6. No.

7. Public waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Coracle net - - -	2	s. d. 20 0	2
Wade net - - -	1	20 0	2
Rod and line - - -	31	10 6	1

Private waters. None.

8. None.

9.

Offences charged.	No. of defendants in each case.	Convicted.	Penalty, if convicted, on each defendant.
Using net without a licence in salmon river.	3		Standing over for counsel's opinion whether persons can fish in salmon river for other fish except salmon.
Using small mesh net -	3		Do. do.

10. One.

11. None.

12. That power be given Boards of Conservators to extend the close season, also to fix the size of the mesh in certain waters at different times of the season.

TOWY, LOUGHOR, AND TAF DISTRICT.

1. The take of fish has increased, owing to the preservation of the river.

2. No.

3. No.

4. No.

5. No.

6. No.

7. Public waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Coracle net - - -	24	£ s. 1 10	2
Do. - - -	24	2 0	2
Hand net - - -	1	0 15	1
Do. - - -	8	1 0	1
Draft net - - -	1	3 15	3
Do. - - -	17	5 0	3
Rod and line - - -	93	1 0	1

The reason of the different rates of licence duty is that up to the 23rd day of March last the old duties were payable; after that date the Secretary of State gave his approval to the new scale.

Private waters. None.

8. No.

9.

Offences charged.	No. of defendants in each case.	Convicted.	Acquitted.	Penalty, if convicted, on each defendant.
Fishing during close time -	5	3	2*	4l. 11s. 8s., and 3s.
Fishing for salmon with a gaff -	3	3	—	2l.
Selling unclean salmon -	5	5	—	3l., 1l., 1l., 15s., & 6d.
Fishing for salmon during weekly close time -	1	1	—	4l.
Using pitchfork to catch salmon -	1	1	—	1l.
Fishing with spear -	3	3	—	10s.
Fishing with light -	1	1	—	1l.

* Mistaken identity.

10. The number varies from three to five.

USK AND EBBW DISTRICT.

The take of fish by putchers and nets continues to increase. The stock of fish in the river appears to be larger each year, owing to the care taken of the spawning beds in winter. During the past season the waters were full of fish, but, for some reason which we cannot explain, they refused to take a fly. The anglers have therefore done badly.

2. It is impossible to estimate the number of fish taken in the nets, &c. Those taken with rods did not probably quite reach 800.

3. It is believed not. A weir (not returned in the last report) was erected at Llansoar on the Soar Brook, in 1870, and it is not provided with a fish-pass; we understand, however, that the proprietor is ready to enter into an agreement to construct one when required.

4. A new fish-pass has been constructed in Newton weir, with the approval of the Secretary of State. It is an exact copy of the old pass, and would be more efficient if it were larger.

5. A tannery has been built near the mouth of the Afon Llwyd.

6. A conviction against the proprietor of the Usk Naphtha Works for discharging refuse into the Olway was quashed on appeal to Quarter Sessions, in January last; showing the necessity for an amendment of the law relating to pollutions. A tin-plate manufacturer was convicted a second time for discharging vitriol into the Ebbw. The pollution of the Afon Llwyd is so great that the manufacturers on the lower part of that stream have formed an association for the purpose of restraining the manufacturers above them. With the assistance of the Newport Harbour Commissioners they have obtained some convictions, and they are promised that the nuisance shall be abated. Any such action is of course beneficial to the fisheries.

We have drawn the attention of the Harbour Commissioners to the large quantity of ashes, &c. which is daily tipped into the Clydach.

7. Public waters. None.

Private waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each
Putchers - - -	3,200	1 <i>l.</i> for 50	7 for all.
Putts - - -	173	2 <i>s.</i> 6 <i>d.</i> each	1 for all.
Stop net - - -	5	5 <i>l.</i>	1 each.
Beating net - - -	1	5 <i>l.</i>	4 each.
Rod - - -	191	1 <i>l.</i>	1 each.

8. No.

9. We regret again to be compelled to draw the attention of the Inspectors to the manner in which the law is administered in the western part of Breconshire.* During the past year there were but 16 prosecutions, resulting in 15 convictions and one case dismissed with the full concurrence of the Board, in the ten petty sessional divisions of Newport (1), Caerleon (0), Pontypool (1), Usk (1), Raglan (0), Trelleck (0), Abergavenny (9, 7 in one case), Tredegar (1), Brynmawr (0), Crickhowell (3 in one case). Whilst in the three petty sessional divisions of Brecon, county and borough, and Debynock, there were 44 cases resulting in 35 convictions, many of them of nominal amount; 2 cases were withdrawn, and 7 were dismissed. The evidence adduced in these seven cases one would naturally have assumed to be sufficient to ensure a conviction. The leniency shown by the magistrates has resulted in the formation of organized gangs, who have in one instance committed a very murderous assault on the water

bailiffs. The case last referred to has been heard since the expiration of the year, and fines amounting in all to 10*l.*, 10*l.*, and 5*l.* have been imposed upon three of the defendants respectively. If it was once understood that the whole body of magistrates would uphold the law, as has been done in this instance, the offences for which the western part of Breconshire is now so notorious would doubtless soon cease to prevail.

Offences charged.	No. of defendants.	Convicted.	Acquitted.	Penalty if convicted, on each defendant.
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MONMOUTHSHIRE AND EASTERN PART OF BRECONSHIRE.

Having a gaff with intent, &c. - - -	1	1	—	5 <i>s.</i>
Killing an unseasonable salmon - - -	10	10	—	10 <i>s.</i> , 6 <i>s.</i> , 4 <i>s.</i> , 4 <i>s.</i> , 6 <i>s.</i> , 6 <i>s.</i> , 6 <i>s.</i> , 6 <i>s.</i> , 6 <i>s.</i> , 6 <i>s.</i>
Spearing a salmon - - -	1	1	—	10 <i>s.</i>
Having unseasonable salmon in possession - - -	2	2	—	4 <i>s.</i> , 6 <i>s.</i>
Fishing without a license - - -	1	—	1*	—
Polluting a tributary - - -	1	1	—	10 <i>s.</i>

WESTERN PART OF BRECONSHIRE.

Having a gaff with intent, &c. - - -	18	16	(2 with drawn.)	5 <i>s.</i> , 3 <i>s.</i> , 3 <i>s.</i> , 1 <i>s.</i> 3 <i>d.</i> , 1 <i>s.</i> , 1 <i>s.</i> , 10 <i>s.</i> , 1 <i>s.</i> , 1 <i>s.</i> , 3 <i>s.</i> , 10 <i>s.</i> , 3 <i>s.</i> , 2 <i>s.</i> 6 <i>d.</i>
Attempting to take salmon in fence months - - -	2	2	—	10 <i>s.</i> , 10 <i>s.</i>
Taking unseasonable or unclean salmon - - -	9	7	2†	20 <i>s.</i> , 20 <i>s.</i> , 5 <i>s.</i> , 20 <i>s.</i> , 6 <i>s.</i> , 5 <i>s.</i> , 2 <i>s.</i> 6 <i>d.</i>
Having unseasonable or unclean salmon in possession - - -	10	8	2‡	{ 5 <i>s.</i> , 5 <i>s.</i> , 1 <i>s.</i> , 5 <i>s.</i> , 5 <i>s.</i> , 11 <i>s.</i> 6 <i>d.</i> , 3 <i>s.</i> , 5 <i>s.</i>
Taking salmon otherwise than by rod and line - - -	2	—	1§	4 <i>s.</i>
Using a strokehall - - -	2	—	2||	—
Assaulting water bailiffs - - -	1	1	—	30 <i>s.</i>

* The informer was himself an old offender, and the magistrates disbelieved his evidence. The Board concur in the decision.

† In this case one defendant was fishing (April 28) with a rod and line; the other gaffed a kelt for him. Both were old fishermen. The fish was gaffed through the head, and immediately seized by a water-bailiff; but the magistrates accepted the explanation that until they brought the fish ashore there were no means of knowing whether it was clean or not.

‡ The defendant in one case, the bailiff and occupier of a farm, was seen to hide something in a bush, which on investigation proved to be a gaff still wet. The servant maid was seen throwing salmon spawn into the river, and treading it into the sand. The farm was searched, and five salmon were found in one of the outbuildings. The magistrates considered it was not proved that the defendant had placed the fish where they were found.

§ In the second case the defendant was sworn to as one of a gang, others of which were convicted; but he was unaccountably discharged, although the evidence in his case was the same as in that of the other defendants.

|| One defendant had no license, the other had a rod license. The first gaffed a fish; the second was in attendance carrying a rod and line, and claimed the fish when seized by the water-bailiff. The first was convicted, the second acquitted.

|| The use of the strokehall was clearly proved, and a similar instrument was produced in court. A brother of one of the defendants, whilst acknowledging that the fish was hooked foul, swore the instrument was called a "sinking fly," and the magistrates dismissed the case! We desire to call especial attention to this case.

10. During the past summer the smallest number employed was two superintendents and five other water-bailiffs. In winter the greatest number is about two superintendents and 13 other water-bailiffs.

11. No new gratings have been erected during the past year, it having been found that in the present state of the law there is no security for their maintenance.

12. The unwillingness of certain Magistrates in the upper portion of the district to carry out the provisions of the Salmon Fishery Laws not only encourages the commission of offences and resistance to water-bailiffs, but also seriously favours a lawless mode of life, which cannot fail to affect the peace of the neighbourhood generally. The Clerk to the Justices for the borough of Brecon has not yet rendered any account or paid over any fines to the Board, although repeated applications have been made to him. The

* Since these answers were returned to us we have received a letter from the chairman of the Usk Board of which the following is a copy :—

"GENTLEMEN,

"In the returns which were forwarded to you by this Board last autumn, some remarks were made in undue leniency which it was considered had been displayed by some magistrates in the neighbourhood of Brecon towards offenders against the Salmon Fishery Laws. As these returns will probably appear in the appendix to your Report several months after they were drawn up, I desire on the part of the Board to state that the observations they contained were designed to apply only to the past; and that the Board gladly acknowledge that, during the late spawning season, the proceedings of the Justices have been marked by fairness and impartiality.

(Signed) "A. D. BERRINGTON, Chairman."

March 7th, 1872.

arrears extend over five years. The Board believe that the Bill drawn by the Committee appointed by the various Boards of Conservators embodies all the more important suggestions which they desire to make with regard to future legislation, and they pray the Inspectors to give that measure their best support. We understand that it is the intention of the Brecon Local Board of Health to construct works for discharging the whole of their sewage into the river Usk, and we pray that the serious attention of the Inspectors may be given to the matter.

The sewage of the town of Abergavenny has also within the last five years been turned into the Usk, to the great injury of the river.

WYE DISTRICT.

- 1. Decreased in the estuary. Increased in the upper waters, which is attributed to frequent floods.
- 2. No idea can be given of the number of fish caught, for want of returns.
- 3. No.
- 4. No.
- 5. One new mine on the Elan is reported to have been opened. The sewage of the city of Hereford has much increased.
- 6. No.
- 7. Public waters. None.

Private waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Rod - - - - -	106	£ s. 1 0	1
Rod - - - - -	69	0 10	1
Draught net - - - - -	19	5 0	3 or 4
Beating net - - - - -	11	5 0	3
Stop net - - - - -	59	3 0	1
Coracle net - - - - -	5	2 0	2
Lave net - - - - -	7	1 0	1
Putchers - - - - -	2,096	1 <i>l.</i> for every 50	Four can manage the whole number licensed.

- 8. No.
- 9.

Offences charged.	No. of defendants in each case.	Convicted.	Acquitted.	Penalty, if convicted, on each defendant.
Killing salmon during close season.	5	4	1	Two 7 <i>l.</i> each, two 5 <i>l.</i> each.
Having unclean salmon in possession.	5	4	1	Two 2 <i>l.</i> 10 <i>s.</i> each, one 2 <i>l.</i> , one 10 <i>s.</i>
Attempting to gaff and spear salmon.	3	3	1	1 <i>l.</i> each.
Having spears and gaffs in possession.	3	2	—	One 3 <i>l.</i> 10 <i>s.</i> , one 2 <i>l.</i> 10 <i>s.</i>
Using stop net - -	1	1	—	5 <i>l.</i>
Do., without licence -	3	3	—	6 <i>l.</i> each.
Do., with illegal mesh -	1	1	—	2 <i>l.</i> 10 <i>s.</i>
Disturbing salmon on spawning bed.	6	6	—	Two 2 <i>l.</i> 10 <i>s.</i> each, three 1 <i>l.</i> each, on 10 <i>s.</i>
Aiding and abetting the killing of salmon during close season.	6	6	—	2 <i>l.</i> 10 <i>s.</i> each.

- 10. Four permanently, and during close season
- 29.
- 11. No.

12. Byelaws are necessary, with the sanction of the Home Office, to define certain limits in a fishery district within which nets, or nets only with certain size of mesh, shall only be used ; to restrict the times and modes of fishing as regards certain places and instruments or engines used ; and to make regulations generally for the improvement, protection, and regulation of salmon fisheries and other fisheries which interfere therewith.

A minimum penalty should be fixed for a first offence against the Salmon Fishery Acts.

In proving a previous conviction against an offender it should be unnecessary to produce a certificate of his previous conviction.

The clerk or some other person should, if authorized by the Board of Conservators, be empowered to conduct proceedings on behalf of the Conservators,

notwithstanding that such person may not be a solicitor.

The Home Office should be empowered to vary and extend the weekly close time.

All modes of fishing (angling excepted) should be prohibited within 100 yards of mill-dams and weirs.

Gratings or some other protection should be placed in mill-sluices and artificial watercourses to prevent salmon ascending or descending thereto.

More stringent measures should be granted to prevent pollution of rivers.

All mill-dams and weirs should be made passable for fish.

Power should be given to the Special Commissioners for English fisheries to deal with the Crown fisheries.

Clause 2. of sec. 34. (28 & 29 Vict. c. 121.) declares that the Secretary of State is to approve of the scale of licences, but omits to define what is evidence of such approval.

The powers of Conservators and water-bailiffs should be extended, viz. to go upon lands, or banks of salmon and trout rivers, in the execution of their duty.

To search all persons found and suspected of having in their possession forfeited fish or illegal engines ; and if such persons are found by night disguised and committing a breach of the Fishery Laws, to apprehend and take such persons before a Justice of the Peace.

Sec. 19. of 24 & 25 Vict. c. 109. should extend to persons having salmon in their possession otherwise than for sale.

The mesh of trout and coarse fish nets should be defined.

Nets of every description should be liable to seizure if found near rivers during close season.

SEVERN DISTRICT.

1. On the whole, the fishing season of last year, although a good one, was not so productive as the previous season. There was a remarkable absence of grilse, while the number of large-sized fish was unprecedented. Owing to numerous short freshes down the river during the summer months the estuary fishing was not nearly so good as that of last season, while from the same cause the take in the mid-districts was five or six times larger. The upper parts of the district were only slightly benefited, owing no doubt to the shortness of the freshes, added to the obstructions to the fish caused by the weirs on the Severn.

2. The total number of salmon caught in the district during the season, as nearly as can be ascertained, was as follows :—

With net or fixed engine :—	
In the tidal part about	- 15,750
In the non-tidal about	- 1,120
	- 16,870
With rod - - - - -	- 44
Total	- 16,914

The estimated weight of the fish was upwards of 100 tons, and averaged the extraordinary weight of more than 13 lbs. per fish.

3. The weir on the Severn at Penarth, the fish pass in which, as stated in the reply to this query last year, had been destroyed by flood water, has since been reinstated, and a new fish pass on the pool plan attached to it.

The two new navigation weirs at Gloucester, mentioned in last year's reply to queries as being in progress of erection, are still incomplete.

4. One new fish pass, as stated above, has been built at Penarth weir, but as it is only recently come into operation sufficient time has not yet elapsed to say whether or not it is successful.

5. Not to the knowledge of this Board.

6. The operations of the Pollution Committee of the Board have been continued to prevent pollutions from entering the rivers ; and when cases of polluting the river have been brought by the Committee to the

notice of those who have caused them, a prompt disposition has usually been shown to abate them. Happily, owing no doubt to the frequent freshes on the streams during last summer, the district has been much freer from pollutions than was the case in the two or three previous seasons.

7. Public waters:—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Rod and line - - -	28	10s.	1
Draft net - - -	55	1l., 2l., & 3l.	From 2 to 5.
Lave net - - -	120	2l.	1
Cross line - - -	3	2l.	2

NOTE.—The rod license is classed under "public" waters, though of course available for public or private. Some of the 55 draft nets are used in public as well as private waters, but it is impossible to distinguish them.

Private waters:—

Name of Instrument.	Number.	Rate at which licensed.	No. of Men required to work each.
Draft net - - -	20	4l. and 5l.	4 or 5
Lave net - - -	16	2l.	1
FIXED ENGINES.			
Stop net - - -	19	3l.	1
Weir trap - - -	1	10l.	1
Putts - - -	245	2s. 6d.	A large number of these instruments are worked by one man; in the aggregate they employ about 30 men.
Putchers - - -	5,350	1l. per 50l.	
Outriggers or leaders -	15	1l. and 5l.	

8. None issued.

9.

Offences charged.	No. of defendants in each case.	Convicted.	Acquitted.	Penalty, if convicted, on each defendant.
Killing salmon during the annual close time -	1*	—	—	—
Fishing for salmon during the annual close time -	3	3	—	One 2l. 10s. and costs; two 1l. each and costs.
Fishing for salmon during the weekly close time -	3	3	—	5l. each and costs.
Fishing for salmon without a proper licence -	2	2	—	One 2l. 10s. and costs; one 2l. and costs.
Buying salmon during close time -	1	1	—	6d. and costs.
Selling salmon during close time -	1	1	—	6d. and costs.
Catching unclean salmon -	2	—	2	—
Selling unclean and unseasonable salmon -	2	1	*1	3l. and costs.
Exposing unseasonable salmon for sale -	2	2	—	One 1l. and costs; one 1l. 5s. and costs.
Having unclean and unseasonable salmon in possession -	8	6	*1	One 6l. and costs; one 5l. and costs; one 2l. 10s. and costs; one 6 months imprisonment; two 2 months imprisonment.
Killing trout in a salmon river during fence time -	2	2	—	2s. 6d. each and costs.
Total -	27			

* Withdrawn; one defendant absconded.

10. Permanently, 17; temporarily, 12.

11. None have been attached this season, either by the Board or by any other person, that the Board is aware of.

12. Nothing beyond what the attention of the Inspectors has been drawn to in previous replies of this Board and in the annual reports.

AVON, BRUE, AND PARRET DISTRICT.

1. Diminished. The diminution is attributed to the weather, and not to local causes.

2. 80 to 90 in the hang; 80 to 90 in butts; 15 to 20 in dip nets; in all, rather less than 200 fish.

There is no rod fishing.

3. None.

4. None.

5. None.

6. None.

7. Public waters:—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
The hang - - -	1	2	3
Dip net - - -	8	10	1
Putchers - - -	967	1 for 50	8 for all.

Private waters. None.

8. None.

9. None.

10. One, permanently.

11. None.

12.

- The weekly close time should be abolished, being useless for protection of fish, and the annual close time should be extended. The fishermen would gladly accept this change.
- Unlicensed persons found on the river or its banks with implements available for the destruction of salmon should be punishable as "in pursuit," &c., in analogy to the Game Laws.
- Persons using butts or putchers as dip nets should be punishable as evasion of license duty.

TAW AND TORRIDGE DISTRICT.

1. It is impossible to give any accurate reply; but the price of salmon in Barnstaple market has been fractionally less than last year, which would suggest an average season. The Appledore fishermen, however, stated to Sir Thomas D. Acland, M.P., in an interview on the 16th October last, that their take this season has been much less than usual, and attributed the cause to "poaching" by small-mesh net men in the close season. The Board think it right to remark that a small-mesh net belonging to the largest net licensee in the district, and one of the very men who had given evidence before Sir Thomas Acland, was declared forfeited on the 25th of the same month for the illegal capture of salmon; and the son and nephew of the owner of the net, being in the boat, were fined for catching them. One of the fish taken was 24½ lbs., the roe weighing 2 lbs. 6 oz.

2 (a.) We can have no accurate knowledge of the number of fish caught with the net in the estuary.

(b.) The total number of rod licenses for the Taw and Torridge district this year was 172. After a very careful inquiry by a member of our Board, it was found that the number of salmon taken with the rod and line on the Taw and Mole during the last September and October is not more than 22, and of these 19 were killed in October. The number of fresh run fish taken with the rod in the same rivers from 1st of February to the end of August was still less.

In the Bray, a considerable tributary of the Taw, during the whole season only eight were captured with the rod and line as far as can be ascertained.

In the Torridge and its tributaries, the Board are unable to learn the number, but the take was very small.

3. None have been either erected or altered.

4. None have been built or altered.

5. We are not aware of any new mines or factories being opened, or of any new deleterious substance being poured into the rivers.

6. The sewage from the town of Barnstaple still flows into the river Taw, but the Board are not aware what the municipal authorities propose to do with the deposit under the new system of drainage now being carried out. The Board fear that the other towns in their district do not effectually utilize the sewage, and that much of it flows into the rivers.

7. Public waters:—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
V weir - - - - -	2	£ 0 0	2
Box - - - - -	2	0 0 0	1
Net - - - - -	83	0 0 0	4
Rod - - - - -	172	0 10 6	1

Private waters. None.

8. No.

9.

Offences charged.	No. of defendants in each case.	Convicted.	Penalty, if convicted, on each defendant.
Killing two salmon in close time - - - - -	4	4	1l. 15s. each, including costs.
Do. do. - - - - -	3	3	Do.
Attempting to kill salmon in close time - - -	2	2	One 5l. and costs, one 3l. and costs.
Using a gaff with intent, &c. in close time - -	2	2	10s. each and costs.
Having salmon in their possession in close time -	2	2	One 5l. and costs, one 1s. and costs
Having salmon in his possession in close time -	1	1	25s., including costs.
Using a spear - - - -	1	1	5l. and costs.
Attempting to kill salmon in close time - - -	2	2	7s. 6d. each and costs.
Having unclean salmon in his possession - - -	1	1	1l. and costs.
Do. do. - - - - -	1	1	15s. 6d., including costs.
Having a gaff in their possession, &c. - - -	2	2	3l. each and costs.
Catching unclean and unseasonable salmon -	3	3	1l. each and costs.
Having in his possession young salmon - - - -	1	1	6s. and costs.
Fishing during weekly close time - - - - -	3	3	5s. each and costs.
Do. do. - - - - -	3	3	10l. each and costs.
without a licence - - -	1	1	14s. 6d. and costs.
Having unseasonable salmon in his possession -	1	1	2l. and costs.
Offering salmon for sale in close time - - - -	1	1	5l. each, and 2l. each for each fish, and costs.
Killing two salmon in close time - - - - -	2	2	

10. In December 1870 and Jan. 1871 - Six.
 In February, March, April, June, July, and August - Two.
 In September and October - None.
 In November - Two. } All county police.

11. None have been erected, the Board having no power to do so, as they would desire.

12. In reply to this question, the Board sees no reason to alter its reply to the similar queries 14 and 15 in the Eighth Annual Report of the Inspectors to the Secretary of State. The Chairman of the Board, the Earl Fortescue, then carefully examined witnesses, and the answers to the questions were given after long and deliberate consideration on the part of the Board.

CAMEL DISTRICT.

1. The number of fish taken in 1871 was a full average. A few have been taken by poachers, since the close season commenced, *above* the weir at Dunmere, but those taken legally by nets were all below the weir.

2. No.

3. No.

4. No.

We have still the same difficulty about the fish pass at Dunmere. Mr. Walpole suggested a plan which we think would render the passage for the fish to their spawning beds more easy, but we have been unable to carry it out this year for want of funds.

5. No.

-6. No.

7. Public waters. None.

Private waters:—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Rod and line - - - -	45	5s.	1
Rod and line - - - -	14	1s.	1
Net - - - - -	3	2l.	2

8. No.

9.

Offences charged.	No. of defendants in each case.	Convicted.	Penalty, if convicted, on each defendant.
Catching salmon without license - - - - -	1	1	3l.
Miller neglecting to turn off the water when not using his mill - - - - -	2	2	13s. and 10s.
Catching salmon without license - - - - -	2	2	2l.; one paid, one went to prison in default.
Having salmon in his possession at unseasonable times (viz., within the fence days) - - -	1	1	5l.
Having illegal instruments in his possession - - -	1	{ Adjourned.	—

10. One permanently employed.

11. No.

12. We strongly recommend that in any future legislation power be given to the Conservators (with consent of the Home Office) to alter the fence days in the case of late rivers like the Camel:

2. That compulsory powers be given for the attachment of gratings to mill "lades" and other artificial channels:

3. That the provisions of the Poaching Prevention Act be extended to fresh-water fish.

FOWEY DISTRICT.

1. The take of fish by net is not so large as last year; by rod and line it has considerably increased.

2. The number caught by net is estimated at - - - - -	60
By rod and line - - - - -	24
Total - - - - -	84

5. There is one new mine in St. Neot Valley, called Tremaddock. But the ridds are situate on the main stream above its confluence with the St. Neot stream.

6. In accordance with the request of Mr. Walpole, the "adventurers" of Tregeagle and Hammett mines commenced making catch-pits, but at the period of Mr. Foster's inspection (at the request of H. M. Inspectors of Fisheries) they were not in use. Trout breed and thrive in the St. Neot stream close to these mines.

7. Public waters:—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Draft net - - - - -	9	£ 0	from 2 to 6
Rod and line - - - -	19	0 5	1

Private waters. None.

8. No.

9. No.

10. Two employed during the months of November, December, and January, during the spawning season.

11. A grating has been provided for Powder mill leat, but as we cannot enforce its use it is never at work.

12. We beg to repeat what we stated last year in answer to this question; viz.,—

That mill owners should be compelled to erect and maintain sluices and gratings, and that millers should be compelled to shut off the water when not used for milling purposes, and put down or permit to be put down the gratings, when required by the Board to do so, under a penalty.

That in clause 5, Act 1861, the words "be injurious to fish or injuriously affect the spawn or spawning beds" be substituted for "cause the water to poison or kill the fish."

We also beg to repeat the defects and deficiencies in the Salmon Acts which in our opinion require amendment; viz.,—

That the time for trout fishing should be regulated.

That all nets used in an estuary or river should be registered, and pay a small duty.

That no boat used with a salmon licence should carry another net of a different mesh while so used, under a penalty of loss of licence.

That Boards of Conservators should have power to make bye-laws, subject to the approval of the Secretary of State.

That all prosecutions instituted by the county constabulary should be under the direction of the Board of Conservators, who should receive the fines.

That minimum penalties should be fixed for all offences.

We also beg to call your attention to the following extracts from letters received by the Board from parties holding licenses during the past season; and these opinions and statements are fully borne out by all the evidence which has been collected on the subject.

1. "I trust you will add in your next report the great decrease this season, and the injustice of withholding from the fishermen their 'ancient and just rights.' Not enough has been captured this season to meet expenses; and, as I have stated before, the Fowey will never become profitable for taking salmon in the summer months."

2. "I cannot refrain from stating that since the close of the fishing season the salmon have been plentiful in the harbour (Fowey); and it is the opinion of others as well as myself that the season under the Act is altogether wrong, as we have ample proof the fish are not in so early this season."

3. "As you request me to let you know about the salmon fishery, I have only caught 20 salmon for the season; 4 the beginning of August; 4 about the 15th; 7 the 21st; 4 the latter end of August; and 1 the 30th of August; all the fish made about 8*l.* 2*l.* for the licence left only 6*l.* for the men and craft for all the season,—about 6*s.* a man, and the craft much in debt. I hope you will take it into consideration, and try for our welfare for the coming season. Unless the time is lengthened we cannot take the license out, for the salmon will not come so early in the year, that they may be caught, but they will come in their right season as they always did before."

TAMAR AND PLYM DISTRICT.

1. Increased in the Tavy. Decreased in Plym, owing to pollution by china clay works. Decreased in Tamar by mine pollutions. Decreased in Yealm, owing to paper mills. No fish in Lynher, from pollutions.

2. Fifty with legal nets; 300 taken with rod.

3. No new weirs have been built.

4. No.

5. On Plym china clay works, from Shaugh Bridge downwards. On Lyd, a tributary of Tamar, the refuse from the manganese works is, in the opinion of the superintendent, destroying the spawning beds. On this point opinions differ.

6. No effectual steps have been taken.

7. Public waters. None.

Private waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Box - - - -	1	£ s. d. 7 0 0	1
Net - - - -	3	3 10 0	4
Rod and line - - -	181	0 7 6	—

8. None.

9. No prosecutions.

10. One superintendent water-bailiff. Two under bailiffs, and two occasional watchers.

11. A grating has been placed at the Tavistock Canal, and that is now effective; but the grating at the intake of the leat on the Plym for supplying the town of Plymouth with water is still very defective, and salmon fry get back into the leat.

12. Fishing with small-mesh nets in the estuary of all salmon rivers should be prohibited from the end of April until the middle of June. Increased powers should be given to the Conservators for dealing more effectually with obstructions on the rivers, and with pollutions of every kind. Powers should be given to the Conservators to make byelaws.

AVON (DEVON) DISTRICT.

1. It has slightly diminished, but we cannot account for the cause of the decrease.

2. Cannot say the number caught with nets. With rods from 40 to 50.

3. No.

4. No.

5. No.

6. No.

7. Public waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Draft net - - -	6	£ 5	Average 3 to 4
Hand net - - -	1	1	3
Rod - - - -	23	1	1

Private waters. None.

8. None.

9.

Offences charged.	No. of defendants in each case.	Convicted.	Penalty, if convicted, on each defendant.
Using spear - - -	2	2	4 <i>l.</i> and 5 <i>l.</i>
Using gaff - - -	1	1	5 <i>s.</i>
Having possession of gaff -	1	1	5 <i>s.</i>
Having possession of spear -	3	3	5 <i>l.</i>
Taking unclean salmon -	5	5	One 5 <i>l.</i> , and four others fined 1 <i>l.</i> each.

10. One permanently, and three temporarily.

11. No.

12. It is considered that as few salmon enter the River Avon before November, the net fishing might be extended to the first of that month.

It is suggested that in case of any future legislation the Conservators and water-bailiffs should have power, independently of the landowners or occupiers, during the close season, to summon any persons that may be found trespassing on the banks of the River Avon above the flow of the tide, either for the purpose of destroying salmon or disturbing them, unless such person or persons have been authorised by the owner or occupier to pass over the land.

That power of search should also be given to Conservators and water-bailiffs.

DART DISTRICT.

1. Increased considerably, owing to preservation of river.
2. Cannot say, but many more than last year.
3. No.
4. No.
5. None.
6. None.
7. Public waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Net	23	£ 5	4

Private waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Net	1	£ 5	4
Rod	41	1	1
Rod	2	7s. 6d.	1

8. No.
- 9.

Offences charged.	No. of defendants in each case.	Convicted.	Acquitted.	Penalty if convicted, on each defendant.
For fishing during weekly close time	7	7	—	Four 10s. each and costs; three 2l. each, with forfeiture of net.
For attempting to catch salmon within 50 yards of a milldam having no fish pass attached to it	3	3	—	2l. and costs, with forfeiture of net.
For catching salmon within 50 yards of dam	3	—	3	Could not prove they were actually within the distance.

10. Four.
 11. None.
 12. There should be compulsory powers to enable Boards to erect fish passes where required.
- A total observance of weekly close time for all kinds of fish in the salmon rivers and their estuaries.
- Stronger powers to Boards to effectually prevent the pollution of rivers by mines or other works, and removal of necessity for proof of the actual death of fish by poison in order to obtain a conviction.
- All waste fenders and sluices should be bound to be lifted every week, from Saturday evening at six to Monday morning at six, by all millowners and occupiers, and head weir fenders put down.

TEIGN DISTRICT.

1. No. The poisoning of the waters by the mines is the cause of the scarcity of fish.
2. There are none legally caught.
3. No.
4. No.
5. No; but one old mine in the parish of Christow is about to be re-worked.
6. None but preliminary negotiations with the miners.
7. None.
8. No.
9. No.
10. None.
11. No.
12. The question of the pollution of rivers by mine waters and other poisonous ingredients is in a very unsatisfactory state, and requires amendment by legislation.

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EXE DISTRICT.

1. Yes. Fish increased in consequence, as is believed, of the lower weirs being rendered easier for fish to pass over.
2. No. It is impossible to ascertain this from the fishermen. None with rod.
3. No.
4. Old passes have been repaired and improved.
5. No new mines.
6. None.
7. Public waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Draft net	9	£ s. 3 10	1 to 3

Private waters. None.

8. No.
 9. None.
 10. One permanently, one temporarily.
 11. No.
 12. Yes. So long as seine nets with small mesh are allowed to fish in the estuary for other fish than salmon, the salmon must be caught by them, though it is very difficult to detect the fishermen.
- No small mesh should be allowed in estuary, and no draft net without a license.

OTTER DISTRICT.

3. None.
 4. None.
 5. None.
 6. None.
 7. None.
 8. None.
 9. None.
 10. None.
 11. There is an artificial weir, made with wood or brushwood, about two miles north of the sea, and situate just below Otterton Bridge, made purposely to prevent the ascent of salmon during the summer months; and there is a large salmon hutch, about 100 feet above the tail of the mill leat from Otterton Mill which runs into the river Otter, below the artificial weir. The artificial weir is open in the centre in close time. A great many salmon have been captured in the salmon hutch this summer; in fact, it is impossible for a salmon in the summer to ascend this artificial weir: in attempting to get up the mill leat it is sure to get into the hutch. Salmon must either return to the sea again, or be captured in the hutch. There is no other obstacle to the ascent of salmon in the river Otter.
 12. The river Otter is more frequented by salmon in the winter months, principally for the reproduction of their species. Formerly the production was very numerous, but of late years not so.
- An Act of Parliament suitable for large rivers would not apply to our small Devonshire streams, into which salmon enter almost simply to reproduce their own species; but if all obstacles were removed, and the Act so adapted that the majority of riparian owners could form an association for fishing and the protection of salmon and trout in the whole stream or divisions of it, under certain rules, to be approved by the Secretary of State, it would be beneficial.

AXE DISTRICT.

1. Diminished greatly. Cause unaccountable unless it be the supposed pollution of the river Axe near its mouth by the sewage of the town of Seaton which is the chief if not the only cause of the take of fish having diminished.

2. (a.) Cannot tell the number of fish taken by net, but believe that nine salmon and about 200 peal and sea and bull trout were so taken.

(b.) Do not know, but believe about 30 peal and sea and bull trout were so taken, but no salmon.

3. No new weir has been built or old one altered in 1871.

4. A new pass has been built at Westwater on the river Yarty in 1871. It is believed to be successful.

5. No.

6. No steps were taken in 1871 to prevent pollution of any kind, but the attention of the Inspectors of fisheries was directed to the supposed pollution near the mouth of the river Axe by the sewage of the town of Seaton.

7. Public waters, none.

Private waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Draught net	6	£ 5	3 or 4
Rod	10	1	1

8. None.

9. None.

10. One permanently.

11. None.

12. 1st. As regards future legislation we think the present close time very mischievous, and that the close time on small rivers like the Axe should commence on 1st November and end on 30th April. No fresh run fish enter the Axe until May, and few salmon until September, and as the present close time ends on 31st January foul fish only can be taken from that date until May.

2nd. We think the powers of water-bailiffs and Conservators should be extended.

FROME DISTRICT.

1. Increased. The nets being used oftener than last season.

2. About 45, averaging 13 lbs. The largest fish caught was 34½ lbs., the smallest 5½ lbs.

3. The old mill, called "North mill," in the river Piddle or Stour, has been pulled down, and a new salmon weir made.

4. None.

5. None.

6. None required.

7. Public waters. None.

Private waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Net	2	£ 5	3 each.
Rod	1	1	1

8. None.

9. None.

10. None.

11. None.

12. Bye-laws should be made—

To prevent using illegal instruments :

To stop eel spearing in the rivers during the months of December, January, and February.

Fixed engines used for catching flat and other fish in the estuary should be prohibited.

AVON (HANTS) DISTRICT.

1. Diminished, as compared with the take of last year. The low state of the river last winter, which

caused the hutches to be kept down, preventing the fish going up ; also the severe frosts.

2. It is believed about 1,800 were caught in this district with net.

We are unable to ascertain the number taken with rod.

3. No new weirs have been built.

It is reported to us that Bickton weir has had a coping of three inches added to it on the top.

4. No.

5. No.

6. No such steps were necessary.

7. Public waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Net	20	£ 3	4
Rod	2	1	1

Private waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Net	10	£ 3	4
Rod	14	1	1

8. No general licenses have been issued.

9. No prosecutions have been instituted.

10. There is one water-bailiff permanently employed.

A small payment is made to those drowners in the Upper Meadows who have been known to take care of the different spawning grounds, and in other ways to assist in the preservation of the fish.

11. No.

12. We would refer to our full report of last year on the proposed Salmon Bill.

STOUR (CANTERBURY) DISTRICT.

1. The river has not been fished beyond a few trial nettings.

See reply to No. 5.

2. Only two or three fish were caught with net. No rod fishing for salmon has taken place.

3. No.

4. No.

5. The sewage from the City of Canterbury is discharged into the river below Fordwich in an imperfectly filtered state, and fouls the river for several miles. The blow-boat, when at work, by keeping the sewage in motion, extends its effects much further than would otherwise be the case. In the opinion of persons best competent to judge, no salmonidæ will approach Fordwich, except in flood time, until this evil is remedied.

6. A letter has been addressed to the Local Board of Canterbury, requesting them to desist from pouring foul matter into the river.

7. Public waters. None.

Private waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Draft net	1	£ 5	4

8. No.

9. None.

10. Four.

11. No.

TRENT DISTRICT.

1. Decreased in lower waters, and increased in upper waters. The floods in June and July.
2. Much smaller take than last year.
3. No.
4. No.
5. A new chemical factory has been erected at Stockwith near Gainsboro', and the refuse, which is most deleterious to salmon, is turned into the river Trent.
6. No. The Board has no power.
7. Public waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Draught net	9	£ 5	3
Hand or bow net	11	1	1

Private waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Draught net	4	£ s.	3
Rod and line	7	5 0 0 10	1

8. None.

9.

Offences charged.	No. of defendants in each case.	Convicted.	Acquitted.	Penalty, if convicted, on each defendant.
*Taking salmon during close season	2	—	2	
*Illegal possession	2	2	—	10s. each.
Spearing a salmon	1	1	—	10s.
Illegal mesh to net	1	1	—	12.

* Same persons.

10. Only one permanent watcher.

11. Afraid not.

WHARFE, NIDD, URE, SWALE, AND OUSE DISTRICT.

1. Increased. Owing to strict preservation and non-destruction of kelts.
2. With net, 2,211, averaging 13½ lbs.; with rods, not ascertained.
3. None that we were aware of.
4. A new pass has just been completed at Wetherby on the Wharfe, but its success has only been partially tested.
5. Not known; but a representation has been made to the Board that gas and tan-yard refuse has recently been turned into a brook near Otley, and poisoned 150 trout.
6. No; but the Board will institute inquiry into the above poisoning case, and endeavour to bring the offenders to justice. The law sadly requires amendment. The Board strongly urge upon Government to bring in a Bill which will embrace the whole subject of pollution.
7. Public waters. None.
- Private waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Draught net	25	£ 5	3

8. Two at 2l. each.

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9.

Offences charged.	No. of defendants in each case.	Convicted.	Acquitted.	Penalty, if convicted, on each defendant.
Angling for salmon during yearly close time	1	1	—	1l. and 11s. costs, and forfeiture of rod and line.
Having und an salmon in possession	6	6	—	Three 2l. each, and 12s. 4d. each costs; one 2s., and 12s. costs; one 10s., and 10s. 9d. costs; one 2l., and 10s. 9d. costs.

* Fined a nominal sum, the man being a pauper.

10. One permanently, and one temporarily.

11. None.

12. The Board strongly urge that in any future legislation additional powers should be conferred on Boards of Conservators, to enable them to erect fish passes over all dams that intercept the passage of salmon; such fish passes, where practicable, to have an inlet of not less than 12 inches square below the crest of the dam. That compensation be given to owners for any damage to weirs arising from the construction of such inlet, or for loss of water power when it is not running over the weirs; such damages to be ascertained and settled by two independent hydraulic engineers or their umpire, and their decision to be final and conclusive.

That the election of Conservators be retained in the hands of Justices at Quarter Sessions as heretofore, as being a system by far the most equitable and fair, as Justices are, as a class, impartial in their office, and act without regard or respect to persons.

DERWENT (YORKSHIRE) DISTRICT.

1. Diminished owing to dams on the river, which fish are unable to pass, except during flood time.
2. With nets, 1,000, averaging 12½ lbs. None with rod.
3. None that we are aware of.
4. None.
5. None.
6. None.
7. Public waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Draught net	2	£ 5	3
Bow net	3	1	1

Private waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Draught net	8	£ 5	3

8. No.

9.

Offences charged.	No. of defendants in each case.	Convicted.	Acquitted.	Penalty if convicted, on each defendant.
Having two unclean salmon in possession	1	1	—	5s. each fish, and 12. 3s. 6d. costs.
Taking an unclean salmon	1	1	—	5s., and 12. costs.

10. One permanently.

11. None.

12. See reply to this query from the Wharfe district. The Board again urge the importance of this district being united to the Wharfe, &c.

TEES DISTRICT.

1. No.
2. No.
3. No.
4. No.
5. No.
6. No.
7. Public waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Draught or hang net	33	£ 5 each	3

Private waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Rod and line	72	£ 1	1
Draught or hang net	14	5	3
Shackle net	5	5	3
Pole or rake net	1	5	2

8. No.

9.

Offences charged.	No. of defendants in each case.	Convicted.	Acquitted.	Penalty, if convicted, on each defendant.
Taking brandling	1	1	—	12.
Snatching salmon	5	3	2	52.
Gaffing salmon	4	4	—	27.

10. The police for the southern division of the county of Durham and the North Riding of the county of York undertake these duties, charging the Conservators with the cost. This amounts to 312*l.*, and there are usually five men employed.

11. None

12. None.

THE TYNE DISTRICT.

1. The take of fish has increased; caused by protection.

2. (a.) The average number of fish caught with the net are, as near as can be calculated, 800 per day, equal to 121,600 for the season.

(b.) Cannot give any idea of the number caught with the rod.

3. No.

4. No.

5. No.

6. No.

7. Public waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Draught net	190	£ 5	3 or 4
Rod and line	135	1	1

Private waters. None.

8. Seven. Produced 32*l.* 1*s.* 9*d.*

9.

Offences charged.	No. of defendants in each case.	Convicted.	Withdrawn.	Penalty, if convicted, on each defendant.
Fishing for salmon during weekly close time	3	1	2	1 <i>l.</i> and costs.
Do. do.	2	1	1	1 <i>l.</i> and costs.
Do. do.	2	2	—	1 <i>s.</i> and costs.
Fishing for salmon with a net too small in the mesh, on 6th July 1871	1	1	—	5 <i>l.</i> and costs.
Fishing for salmon with a net, not being duly licensed, at Ryton, on the 6th July 1871	1	—	1	—
Fishing for salmon with a fixed engine, to wit, a net anchored at St. Mary's Island, on the 15th July 1871	2	2	—	One 1 <i>l.</i> and costs, and one 2 <i>l.</i> and costs. Last went to gaol 3 months.
Do. do.	2	1	1	1 <i>l.</i> and costs. Went to gaol.
Spearing salmon on the 17th August 1871	3	2	1	1 <i>l.</i> and costs each.
Catching salmon in annual close time	1	1	—	2 <i>s.</i> and costs.

N.B.—The number of nets seized by the water-bailiffs at sea and in the river during the season is 22.

10. Six police constables and two water-bailiffs permanently. None temporarily.

11. None have been attached.

COQUET DISTRICT.

1. The take of pure salmon has increased, and the take of bull trout decreased.

2. We cannot reach at any thing like the number of salmon and bull trout caught in the district, as it is impossible to know how many have been taken with hang nets on the sea coast.

3. One. Yes.

4. None.

5. None.

6. None.

7. Public waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of men required to work each.
Draught net	29	£ 5	3

Private waters :—

Name of Instrument.	Number.	Rate at which licensed.	No. of Men required to work each.
Rod	13	£ 1	1
Draught net	2	5	3
Cruise	1	10	3

8. Yes; three. 107*l.* 12*s.* 10*d.*

9. None.

10. Five.

11. None.

12. The district of the river Coquet is so very late that it is useless to open the fisheries till 1st April, and they should not close till 31st October, as the fish are in the best condition up to that date. Some rivers are late, others early, and this does not arise from anything connected with the temperature of the water or its quality. There are several varieties of the salmon (pure): some go into the rivers early in December and January in the prime condition, while others do not take the river till April and May; and in many rivers not a fish enters till June, and they continue in good condition till October; whereas in the early rivers they become baggits as early

as August, thus showing that this system of a uniform close time is as absurd as it is unjust to the river proprietors and the tacksmen of the different fisheries. There should be a time of opening and closing for each separate river, especially where they differ so widely in the same district. It is a ridiculous

thing to say that here is a sheep, an ox, a turkey, a goose in the prime condition in December and January, but the law says you must not kill them till February, and when they are lean and not fit to kill the law allows you to do so; the sooner such a bad law is repealed the better.

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REPORT

OF THE

INSPECTORS OF IRISH FISHERIES

ON THE

DEEP SEA, COAST, AND INLAND FISHERIES OF IRELAND,

FOR

1871.

Presented to both Houses of Parliament by Command of Her Majesty.



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1872.

Page

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TO HIS EXCELLENCY JOHN POYNTZ, EARL SPENCER, K. G.,
LORD LIEUTENANT-GENERAL AND GENERAL GOVERNOR OF IRELAND.

MAY IT PLEASE YOUR EXCELLENCY,

WE, the Inspectors of Irish Fisheries, in conformity with the 112th sec., 5 & 6 Vic., cap. 104, beg to submit our Report on the Sea and Inland Fisheries of Ireland for the year 1871.

There was much difficulty and delay in obtaining returns last year from the Coast-guard of the number of vessels, boats, and men engaged in the Sea Fisheries, in consequence of a large portion of the coast being unguarded, and the diminished number of the force, owing to many being obliged to be absent at the training-ships. It was therefore impossible, consistently with the performance of their other duties, for them to proceed into the unguarded districts to obtain statistics until the year had advanced. The returns relative to craft and crews which appeared in the Report for 1870, really represented the numbers for 1871. Under these circumstances we did not consider ourselves justified in putting the Coast-guard to the trouble, and incurring the outlay (as the expenses of the latter while collecting the statistics along the unguarded part of the coast had to be defrayed by this department) to obtain returns which would necessarily be the same as those which would have been collected in the middle of the present year. We therefore make the same return as appeared in our Report for 1870, viz. :—8,999 vessels and boats, and 38,629 men and boys.

The number of the former in 1846, just previous to the famine, was 19,883, and the latter 113,073. According to this it would appear that as compared with 1846, the vessels and boats are less than one-half, and the crews amount to about one-third.

Considerable as this diminution appears, still it does not, we believe, adequately represent the decrease that has taken place in those following fishery pursuits.

From what we can learn, even relatively, many more of the boats returned as fishing craft up to 1846 came properly under that denomination than those returned as such in 1870 and 1871. Up to 1846 there can be no doubt that a much greater proportion of the craft returned as fishing boats were really employed as such, and that the crews so far as regarded the ordinary Coast Fisheries, devoted much more time to fishing pursuits than those now returned.

On an average the 6,296 boats stated to be partially engaged in fishing are so employed, but for a very short time during the year; their usual occupation being the conveyance of goods, passengers, turf, manure, cutting sea weed, &c. Of the 26,374 men and boys returned as the crews composing the boats partially employed in fishing, we believe that number to be enormously exaggerated.

We found that in many places the Coast-guard adopted the following mode of making up their returns of craft and crews. Having obtained the number of the former, everything being put down as a fishing boat that was so engaged for even one day, the crew required was calculated, and without ascertaining whether such existed, made to appear on the list as if it actually did. Nothing could be more fallacious, as it frequently happens that the same men serve for two boats. Those who go out in a herring boat one day man a boat for long or short line fishing another.

It is hardly too much, therefore, to say that the 26,374 represented as partially engaged in fishing may be taken at fully one-fourth less. The average number of days that this class fish hardly exceed twenty in the year.

This arises from the following causes: the tempestuous nature of a great part of the coast, especially the northern and western portions—the number of days that even good sized and well found boats could venture out being much less than in any other part of the kingdom; the unsuitability of many of the boats to encounter storm, and the

inadequacy of the gear ; the distance from markets, and deficiency in many places of the means of transport. As we stated in our reports for 1869 and 1870, much good could be accomplished by loans to the fishermen for the purchase and repair of boats and gear. If judiciously administered, no appreciable loss to the Exchequer would, we believe, result, whilst the benefit conferred on the coast population and the consumer, would be considerable, as we stated last year :—

“ Another year’s experience fully confirms the opinion which we have already expressed to your Excellency, that ‘ no great improvement can be looked for in the sea fisheries until loans are advanced to a portion of the fishermen for the repair and purchase of boats and gear.’ ”

“ Having visited every part of the coast, and fully informed ourselves of the condition of the fishermen, we unhesitatingly pronounce that if much longer time is allowed to pass without our suggestions being carried out, fishing industry will nearly expire on half the coast. Every day’s delay will add enormously to the difficulty of restoration, as boats and gear get out of repair, and the owners abandon the pursuit—in many instances their little tracts of ground become absorbed in the larger farms near them—and there is less opportunity for the youthful portion of the sea-coast population becoming acquainted with the mode of managing boats or capturing fish.

“ Already in many places the coast may be traversed for miles, even where good shelter exists and fish abound, without a boat being seen. This deplorable state of things is certain to increase if a helping hand be not extended to save this important industry from perishing. Ten or twenty thousand pounds, judiciously expended now—not as a gift, but as a loan—would do far more good than a million given away in half a dozen years hence. Indeed no amount of money, if things be suffered to take their present course, could in that time accomplish what might now be done by the outlay of a few thousands, certain to be again nearly all refunded to the State.

“ Numerous instances have come to our knowledge of industrious fishermen being prevented from adequately pursuing their calling for want of a little money to procure materials, for which they could give satisfactory security.

“ It is not too much to estimate that if men such as these were aided, within a few years fully a million’s worth more of fish would be afforded to the public than there is at present, that the above additional amount would be put in circulation, tending to promote various other industries, the extinction of an important class would be stayed, and a valuable nursery for the Royal and Mercantile Marine preserved.

“ That loans could be easily and inexpensively administered, and that little or no loss would be likely to be incurred if due care were observed by the department charged with their administration in obtaining proper security, is fully proved by the operations of ‘ the Society for bettering the Condition of the Poor of Ireland.’ ”

“ To free grants we would be strongly opposed, and consider that much of the benefit likely to result from loans would be marred unless their repayment was strictly enforced.”

According to a Report lately issued by the “ Society for bettering the Condition of the Poor of Ireland,” a sum of £24,581 was lent by them during the last seven years to the Fishermen on different parts of the coast. Great good appears to have been done and no losses to the Society seem to have occurred.

Although confined to a comparatively small portion of the coast, the Herring and Mackerel Fisheries produce fully three-fourths of the entire sum which we calculate is realized by the capture of fish around the Irish Coast.

Independent of Oyster Fisheries, we estimate this at between Four and Five Hundred Thousand a year. Of this herrings produce under £200,000, and mackerel £150,000. Of the total produce the Irish fishermen hardly gain more than a fourth—English, Manx, Scotch, and French boats carrying off the remainder. According to the return kept at Howth, the highest number of craft belonging to each country fishing in 1871, was :—Cornish, 88 ; Scotch, 44 ; Manx, 168 ; Irish, 113. At Kinsale mackerel fishery, English and Manx boats, 197 ; French, 49 ; Irish, 70.

During the present year, 1872, 100 French boats appeared at one time off Kinsale ; the latter, both in tonnage, equipment, and amount of crew, are far beyond the Irish boats as a rule. This superiority is attributable in a great measure to the encouragement given to the fisheries by the French Government. So much importance does the latter attach to this industry as a means of employment, supply of food, and as a nursery for seamen, that notwithstanding the present large charge on the revenue the grant for the promotion of the fisheries has not been diminished.

The highly prosperous position of the Scotch Fisheries must be attributed in a great measure to the generous aid which for many years they received from the Imperial Exchequer. The fishermen are now independent of Government aid so far as providing themselves with boats and gear ; although a special grant for the repair of poor fishermen’s boats was continued down to a few years ago and only absorbed into the Harbour Fund when no longer required.

The large amount which Scotland still gets annually from Parliament over Ireland for fishery purposes, appears to be well bestowed in the maintenance of a most efficient Board and numerous staff of officials around the coast, competent to afford the fishermen every requisite information. The Report of the Board for this year furnishes gratifying proof of the result of the fostering care extended to the fisheries.

From a Return made up upon estimate, but as carefully and approximately as could be, the total value of the produce of the Sea Fisheries of Scotland, *exclusive of Salmon*,

amounts at present to £1,500,000 per annum—thus divided among the several Fisheries, viz. :—

<i>Fish, viz. :—</i>				
Herrings,	.	.	.	£960,485 0 0
Sprats,	.	.	.	7,022 0 0
Cod, Ling, &c.,	.	.	.	206,201 0 0
Haddock, Whiting, &c.,	.	.	.	264,595 0 0
<i>Flat Fish, viz. :—</i>				
Turbot, Halibut, Skate, Flounder, etc.,	.	.	.	12,280 0 0
<i>Shell Fish, viz. :—</i>				
Oysters,	.	.	.	14,100 0 0
Lobsters, Crabs, &c.,	.	.	.	32,269 0 0
Mussels, Wilks, &c.,	.	.	.	8,479 0 0
TOTAL,				£1,505,431 0 0

Deducting £14,100 for produce of the Oyster Fisheries from the foregoing, there remains £1,491,331 for the other fisheries—unlike Ireland, nearly the entire of this is realized by Scotchmen. In 1869, according to a Report furnished to the Foreign Office by the French Government, 171 vessels, the crews amounting to 3,524, proceeded to the Scotch fisheries, capturing £50,263 worth. The capture by the English and Manx boats, and the few Irish that occasionally go over, hardly exceeds a similar amount, so that Scotland may be said to realize nearly a million and a half sterling by her sea fisheries—a large sum when contrasted with the very small amount gained by Ireland, although having a much larger sea-board.

It is needless to dwell on the vast advantages which must result from the diffusion of so much wealth, not only amongst the coast population of Scotland, but amongst persons engaged in the various industries connected with the fisheries—boat-builders, sail and net-makers, coopers, curers, &c., &c. Some idea may be formed of the ratio at which the Scotch fisheries have progressed from the following :—

In 1810 the total quantity cured amounted to 90,185 barrels; of this 35,848 barrels were exported. In 1871 total quantity cured, 825,475 barrels; exported, 551,605 barrels. Of these 46,347 barrels were sent to Ireland, being an increase of 4,823 barrels over the preceding year.

All this is most creditable to the industry and perseverance of the Scotch people, and to the admirable manner in which everything connected with the Fisheries Board has been managed; but had the same Imperial aid been extended to the promotion of the Irish Fisheries, and if the landed proprietors on the sea coast had exhibited the same interest in the maritime population as that evinced by the gentry in Scotland for the same class, there can be no doubt that the Irish Fisheries would present a very different picture to-day to the melancholy decay in this industry which is rapidly going on around fully two-thirds of the coast, and which must increase unless the means we have pointed out to arrest decline be adopted without delay.

THE HERRING FISHERY.

The capture for 1871 was on the whole rather less than that of 1870, but the amount realized greater, in consequence of the higher prices.

For example, at Howth 61,043 mease of 635 fish were taken in 1870, producing £40,626 12s.; in 1871, 51,915 mease produced £49,197 7s.

At Ardglass only the capture in 1871 was higher than in 1870; in the latter year 26,689 mease, producing £18,303 12s. 4½d. were taken, against 45,495 mease, producing £40,626 10s. 9d., in 1871.

In addition to the usual returns, the capture at Arklow and Kilkeel have this year been added.—*Vide* Appendix.

THE MACKEREL FISHERY.

The capture was less in 1871, but the higher prices given afforded as large a money return as in the preceding year.

The number of boats had increased.

In 1870 there were 120 English and Manx boats, 58 Irish, and 18 French. In 1871, 197 English and Manx, 70 Irish, and 49 French.

Some complaints having been made of irregularities on the part of the French crews engaged in fishing off Kinsale, one of us waited on Monsieur de Champeaux (who is charged with the administration of the fisheries) at the Admiralty, Paris, and stated the matters complained of. He kindly promised that the representation should be attended to. This year we heard of no complaints. We are happy to be enabled to report a very marked improvement in the habits of the fishing population at Kinsale, owing to the exertions of the local clergy, and the earnest efforts of the "South of Ireland Fishing Company," whose operations have conferred very great benefit on the locality.

REPORT OF THE

THE PILCHARD FISHERIES.

A considerable diminution having taken place in the capture of pilchards on the Cornish coast for some years previous to 1870, and prices having risen largely in consequence in the foreign markets—four pounds per hogshead being frequently realized—two of us proceeded to Cornwall to learn the system of capture and cure, in the hope that on those parts of the south and south-west coast of Ireland frequented by pilchards, fisheries might be established. We found that from Kinsale to Dingle in numerous places this fish came in enormous quantities. We afforded every requisite information with regard to capture and cure, and some enterprises would probably have been set on foot only that this year the pilchard again appeared on the coast of Cornwall in such vast quantities that it was impossible to cure the amount taken. Of nearly 50,000 hogsheads cured a large number had to be sold at prices which did not pay the expenses, and many thousands of hogsheads are still remaining unsold in the Italian ports.

Ireland has the advantage of the arrival of the pilchard at a much earlier period than in Cornwall, so that if there was sufficient enterprise the fish caught on the Irish Coast could be usually shipped a month before that taken on the coast of Cornwall. Should the effort which we understand is about being made by persons engaged in the Cornish fisheries, to induce a consumption of fresh pilchards in the London and other large English markets succeed, this fish may become of as much importance on the South Coast of Ireland as the mackerel.

At present they are not only held in little estimation, but are frequently avoided by the fishermen on account of the injury done to their nets by the oil exuding from the fish. This could, however, be prevented, if the same appliances for properly preserving the net were used, as are employed in Cornwall.

TRAWLING.

Acting on the principle we laid down, of proceeding cautiously in the removal of restrictions on Trawling, imposed by our predecessors, we only repealed the by-law prohibiting this mode of fishing in one instance this year, at Glandore Harbour, County Cork, and were influenced in doing so, in a great measure, by the desire of some of the persons who had formerly obtained the prohibition, as they found that the mode of fishing which they formerly contended trawling injuriously affected, had actually suffered by the prohibition, owing to the accumulation of sea-weed, &c., on the bottom, which militated against line-fishing. In the other places where we have allowed trawling to be resumed—Lough Swilly, Belfast Lough, Kenmare Estuary, and Donegal Bay—no complaints have reached us from persons following other modes of fishing.

We have, therefore, much to justify us in opening up other places where trawling might, we believe, be again permitted with advantage to fishing industry and benefit to the consumer, adopting, of course, as we have already done, every precaution to afford other modes of capture due protection.

OYSTER FISHERIES.

During the year we granted ten new licences for the planting of oysters; four in the County Sligo, three in the County Cork, two in the County Donegal, and one in the County Louth.—*Vide Appendix.*

We also held inquiries in different places to ascertain whether persons to whom licences were formerly granted were fulfilling the conditions on which such grants were made, and found that in many instances no steps whatever had been taken to comply with the Act of Parliament.

We refrained from exercising the powers we possess of revoking such licences, but gave warning that, if within twelve months satisfactory cultivation was not proceeded with, the licences would be withdrawn.

The produce from the Oyster Fisheries continues about the same as last year. The spatting this year, so far as ascertainable, was not below that of the last two years. A most pernicious practice prevails in some localities, of removing undersized oysters for sale. Where it is only intended to remove them from one part of Ireland to another for the purpose of fattening, there would not be much to complain of; but when, as sometimes occurs, they are sold to English buyers, the loss to this country is considerable, as two-year-old oysters are disposed of at often less than a fourth of what they would produce if allowed to arrive at maturity, besides which large quantities perish during transit. We hope to stop this practice.

We are gratified to be able to report, as amongst the results of the Royal Commission on Oyster Fisheries, appointed through the instrumentality of the late Earl of Mayo, the extensive operations carried on by Mr. Verschoyle of Tanrego, in Ballisodare Bay, County Sligo, and the establishment of a company, with a capital of £25,000, for the promotion of oyster culture at Ballinakill Harbour, near Letterfrack, County Galway,

under the management of Mr. G. W. Hart, a member of the late Commission. These promise to be successful. Should they prove so, amongst other advantages that will be likely to result from it, will be the instruction they will afford as to the best mode of culture to parties proposing to enter on similar enterprises. Major Scott, of Dodington Hall, Lincolnshire, who originated the latter undertaking, intends also to aid in developing the sea fisheries on that part of the coast, and has already conferred much benefit on the adjoining population, not only by the large outlay from his generous employment, but from the number of youths he is training to manage a better class of boats than they had been previously accustomed to.

HARBOURS.

Much inconvenience is experienced on various parts of the coast from the insufficiency of harbours. In poor localities it is found impossible in many instances to comply with the conditions necessary to obtain a grant in aid of the construction of a pier or harbour. A longer period for the repayment of the amount necessary to be contributed by the locality would often enable a work to be proceeded with, which, under existing regulations, cannot be accomplished. We regret that in a late instance, even where the local subsidy would have been forthcoming, and great benefit conferred on the fishing population by the construction of a harbour, the Treasury declined to make the necessary advance. At Ballyloughane, in the neighbourhood of Galway, we last year recommended the construction of a small harbour, which would have proved most advantageous to the fishermen, and have tended to increase the number of boats. A sufficient local contribution would have been raised to comply with the conditions on which advances are made, but the Treasury, without assigning any reason, declined to give the trifling amount which would have enabled this useful work to be proceeded with. This year we have recommended the construction of harbours at Giles Quay and Black Rock, County Louth.

CONVEYANCE OF FISH TO DISTANT MARKETS.

A very great drawback to the development of the fisheries on remote parts of the coast, is the cost and difficulty of conveying the fish to the large markets. In some places the expense of transit often amounts to fully half the sum realized by the fish. This is particularly the case when, in addition to long overland carriage, the fish has to be carried over two or three different lines of railway, each making a particular charge. The Dublin market, owing to this cause, is deprived of a good deal of fish, which would otherwise be sent from Bantry and other places on the coast of Cork. The industrious and enterprising fishermen of Dingle, in the County Kerry, also suffer from the high charges they are subject to when sending their fish to Dublin.

No industry probably would be more benefited by the greater development and amalgamation of the railways, than the coast fisheries. The following statement, furnished by a gentleman connected with the Scotch fisheries, shows the benefit certain to result to such an industry from adequate railway communication:—

"Before the formation of the Aberdeen Railway and the Great North of Scotland Railway, there was no outlet for the produce of the fisheries, excepting in a cured state. Many of the most valuable kinds of fish abounding on this coast are valueless, except in a fresh condition, for which there was no market beyond the neighbourhood of these fisheries.

"The only means of transit to the English markets was by steamers from Aberdeen and Dundee at long intervals, and these places being far apart, fish in a fresh state were not sent by these vessels, excepting salmon and an occasional consignment of herrings, packed in ice.

"Before the opening of the Aberdeen Railway, there were only 15,000 barrels, yearly, of haddocks smoked in Scotland, yielding on an average 18s. to 20s. per barrel.

"On the opening of the Aberdeen Railway and the Great North of Scotland Railway, the fisheries rapidly improved—curing houses being erected in almost every fishing village along the whole coast, additional boats, better fishing gear, more men employed; so that the quantity reached as high as 250,000 barrels a year, and the price even rising with the increase in quantity—averaging about 35s. per barrel.

"The crab and lobster fisheries were, before the opening of these railways, neglected, and the comparatively small quantity then caught not worth one-fourth the value these fish now realize, the contract price being for lobsters, when carried in welled smacks, only 4d. each—the average price is now over 1s. 6d. Crabs then only yielded, on an average, one half-penny each to the fisher—they now yield from 2d. to 3d. each. This is wholly attributable to the network of railways traversing and connecting the fisheries of Scotland with the English consumers."

ENFORCEMENT OF THE FISHERY BY-LAWS AND REGULATIONS.

On the east coast much inconvenience and loss to many of the fishermen, especially the Irish, has resulted from the illegal practice of shooting or setting the herring nets before sunset, and allowing them to remain after sunrise. This has the effect of frightening away the shoals, which often will not again return. The chief offenders are the Manx fishermen, as they suffer much less from the scaring away of the shoals than our own fishermen, who usually do not carry on fishing beyond the Irish coast.

It would be desirable to have, as in Scotland, a Cruiser permanently attached to

this department, to prevent these objectionable practices, as well as to preserve order amongst the large number of fishermen, sometimes amounting to thousands, fishing off Howth. As will be perceived by the following extracts from the Report of the Scotch Fishery Board for 1870 and 1871, ample assistance is afforded in Scotland for the enforcement of the fishery laws and the preservation of order.

"1870.

"The Superintendence at sea was effectively carried out by H.M.S.V. *Jackal*, Lieut. Commander John Bruce, and the Gun-boat Tenders from the *Repulse* Guardship at Leith and the *Wyvern* Guardship at Hull, as well as by the *Vigilant* Fishery Cruiser. The activity displayed by Lieut. Bruce in preserving order among and aiding the numerous Fishing Boats assembled off Barra and off Wick, stations occupied by the *Jackal*, was of great service, and highly appreciated. South of Berwick, the *Bullfrog* Gun-boat, under command of Lieut. W. B. Ogilvy, detached from H.M.S. *Castor* at Shields, proved a valuable addition to the protective force upon the Coasts. In the duty of Superintendence, Mr. M'Donald, Commander of the *Vigilant* Cruiser, besides carrying out the law with vigour, was the means of adjusting for fishermen cases of compensation for damage from collision."

"1871.

"The vessels employed in 1871 in keeping the Coast were H.M.S.V. *Jackal*, Lieut. Commander Horace W. Rochfort, and the *Vigilant* Fishery Cruiser, Samuel M'Donald, Esq.; also the Gun-boats from H.M.S. *Repulse*, Queensferry, viz., the *Erne*, Lieut. William G. Scott, and *Nelley*, Lieut. Henry Ommaney; and the Gunboat *Rainbow*, Lieut. W. L. Martin, from H.M.S. *Invincible*, Hull. Their services were much appreciated. The employment of the Gun-boats from the Guardships *Repulse* and *Invincible*, was only during the pressure of the great summer Herring Fishery, and confined to the east coast of Scotland, and coast of Northumberland; but the service of the *Jackal* was both upon the east and west coast of Scotland, and was continuous, and the Board found in Lieut. Rochfort a naval Superintendent who proved himself most able and energetic in carrying out the Regulations, and in supplying protection and assistance to the fishermen at sea. The *Vigilant* too was extensively employed in the like service on both coasts, and her commander, Mr. M'Donald, rendered, as he has always done, efficient service upon every station he occupied."

We respectfully submit to your Excellency that we ought at least to be allowed the use of one Cruiser or Gun-boat for similar purposes.

SALMON AND INLAND FISHERIES.

With regard to the salmon fisheries, we have to report that our anticipations of continued prosperity, as expressed in previous reports, have not been disappointed.

The quantity of salmon captured in 1871 was very large, although perhaps somewhat less than in 1870. By far the greater proportion found its way to the English markets. The export is not so much confined of late to the principal towns, such as London, Birmingham, Manchester, and Liverpool, as, in consequence of increased facilities of transport, it is now despatched in many cases direct to the minor markets, which makes it extremely difficult to arrive at anything like a certainty of the exact amount shipped from Ireland.

That the quantity captured in 1871 should be less than in the previous year is easily accounted for by the very exceptional weather which prevailed in the early part of the fishing season.

The amount of money, however, received for licence duty, and available for protection, amounted to £8,865 15s. 9d., being £1,354 2s. 5d. in excess of the largest sum received by Boards of Conservators in any one year since the imposition of Fishery Licence Duties on engines used for the capture of salmon. The number of persons employed has also increased in proportion, and finally, from nearly every district we have received reports that a much greater quantity of breeding fish has been observed in all the rivers as compared with the preceding season of 1870. These are strong evidences of the thriving condition of this branch of the fisheries.

Referring to the increasing value of the commercial fisheries, in our last report we observed that "It may, however, be said that this is accomplished at a sacrifice to a certain extent of the fisheries in upper waters;" and we quoted instances showing that the increased rents paid for upper water fisheries would prove the contrary, the increase in some instances amounting to 700 per cent. for angling waters alone. Rents for such fisheries still continue to increase, and during the past year some have risen 50 per cent., and there is a steadily increasing demand all over the country for angling waters. This goes far to prove that the alarm often expressed by upper water fishermen of over-netting is greatly exaggerated. In saying this we do not wish to convey the idea that there are no well founded complaints of the manner in which fishing is carried on in some of the lower waters. There are cases where such complaints have been well founded, and it has been our duty as well as our desire to control and regulate, as far as lies in our power, practices which might prove detrimental to the general interests of the fisheries.

There are, however, some which, though we may condemn, we feel it difficult to cope with—we allude particularly to the exercise of the right of netting by proprietors in upper waters, which has very considerably increased of late years.

Before the Act of 1863, there were several rivers in Ireland in which the free ascent

of salmon to the upper waters, except during the weekly close time, was barred by stone weirs. These weirs were in most cases valuable properties. The Act of 1863 compelled free gaps to be opened in them all, and there is no doubt that it was the intention of the Legislature in thus facilitating the ascent of salmon to the upper waters, to give the upper proprietors a greater interest in the fisheries adjoining their properties, and to induce them to afford more protection to the spawning fish—thus largely increasing the productiveness of the fisheries, which, whilst securing to themselves a good stock of fish for sport, might be expected to compensate the weir owners for the losses they had sustained by the opening of these weirs.

Had this been the effect of the Act of 1863, the owners of most of these weirs might have had little to complain of, and we believe that the results would be now far more satisfactory; but as it is, the increased quantity of fish has in some instances originated a system of netting in the upper waters by the proprietors which was not previously practised, and thus the good effects of the policy of the Statute have to a certain extent been counteracted. In one river alone no less than thirteen nets have been established in the upper waters since 1863, and their capture has amounted in one year to nearly 15,000 salmon; the consequence has been that in the lakes from which this river flows there is not (according to evidence given before us at public meetings) one salmon now during the angling season for every hundred that were there before the Act of 1863. This is attributed to over-netting in the upper waters.

Had the Legislature at the time of passing this Act thought fit to prohibit any netting in upper waters which had not previously existed, we believe the fisheries would have generally benefited; but as this was not done, it has proved in reality to be a transfer of property from the weir-owners to the proprietors of fisheries in the fresh waters.

We consider that the Statute which confers on us the powers of making By-laws does not give us power to prohibit netting in such places, unless it could be proved that the practice is injurious and detrimental to the fisheries. It could hardly be urged that the practice of netting generally in such places is so, however it may tend to prevent a greater increase of fish eventually for the public. We feel, therefore, we have only power to prohibit the practice in such rivers or parts of rivers where it is proved to be detrimental to the fisheries.

Although the salmon fisheries of the country have greatly increased both in productiveness and value, and the upper waters have been admittedly supplied with a large stock of fish, yet from unknown causes the angling as a rule during the past year has not been good.

When anglers are unsuccessful, the want of success is attributed to over-netting in the tideways; this in general is not the case. There are rivers in Ireland where no netting was ever carried on; they have been abundantly stocked with salmon, and yet the angling in them has been very bad during the past season—whilst, on the other hand, there are also rivers where netting is largely practised in the tideway, notwithstanding which the angling was most successful. In one river in particular, from whence complaints of over-fishing in the tideway are most frequent, we received the sworn testimony of an angler that he had “heavier and better fishing this year than was ever recollected by the oldest man.” It is therefore evident that successful angling does not depend upon a good stock of fish, but that atmospheric and other influences affect it most seriously.

CLOSE SEASON.

During the past year we have made changes in the Close Season in the following districts, viz., Galway, Sligo, Ballyshannon, Letterkenny, Coleraine, Drogheda.

In Galway we have permitted netting to commence on 1st February instead of the 4th, and closed it on 15th August instead of the 19th as before. Angling to cease on 16th October, except in the Cashla and Doochulla, where it will continue to 1st November. These changes were advocated at public meetings by both the upper and lower proprietors who possessed any permanent interest in the fisheries of the rivers.

In Sligo, netting in tidal waters to commence on the 1st instead of on the 15th January, and to close on 15th instead of 31st July, as heretofore.

For angling—1st February to 30th September, except in the tidal waters of the Sligo and also in the Drumcliffe river. In the former it will commence on 1st January, and end 30th September, and in the Drumcliffe river it will end on 19th October.

In the Sligo river, salmon in the finest condition is to be had in January and even in the middle of December. Our predecessors opened the season on the 15th January instead of 1st February. The upper proprietors were at the time opposed to the change, and alleged to us that it had injuriously affected their rod fisheries. In consequence of our believing the alteration made by our predecessors to have been but an experiment, we took more than usual care in investigating the subject. In the month of December we directed experiments to be made to ascertain the quality of the fish. These were

carried out by one of us, and the fish taken were of the finest quality. Prior to making the investigation, a notice was sent to the upper proprietors informing them of the day it would be made, but they refrained from attending or taking any part in the proceedings. We subsequently held a public meeting at Sligo to receive evidence on the subject, at which we all attended. At this meeting several upper proprietors appeared and applied to us to alter the opening of the season from 15th January to the 1st February, in fact to annul the change made by our predecessors. Evidence was received from both sides, but though some of the upper proprietors attended, few came forward to give evidence on the subject. It was proved, however, that but little protection was afforded by the employment of water bailiffs to protect the breeding fish in the winter, except by the lessee of the tidal fisheries. Indeed, throughout Ireland, wherever a several fishery exists in the tidal waters of a river it is almost an invariable rule that the principal burden of protection falls on the owner of such fishery or his lessee. The angling interests of the Sligo river in the upper waters turned out to be very unimportant as compared with the tidal fisheries, when considered as a means of fish supply to the public at a very early season of the year, independently altogether of the great value of the fishery to the owner, by having salmon in the markets at a time when it is most difficult to be obtained, and commands a high price.

It was alleged that the opening of the season on the 15th January had seriously injured the angling; but one of the gentlemen who made the allegation, and who opposed the application to open at an earlier date, admitted that one of the best seasons he ever had was one of the three years during which netting on the 15th January had been permitted.

The weekly close season, if properly enforced, should in most rivers provide a fair stock of fish for the angler; but had it been proved to us that the value of the angling in this river was considerable—as compared with the advantage to the public of having salmon at so early a season of the year, and that the upper proprietors were exerting themselves to protect the fisheries—we should have hesitated before making any change which might deprive the upper waters of a single fish.

Acting on the evidence before us, we decided to open the season on the 1st January.

After our decision to this effect had been made, but before it was published, we received an application, signed by a number of upper proprietors, calling upon us to hold a further inquiry at Manorhamilton, a town situated on the upper waters. To this we at once acceded, and a further meeting was accordingly held. Two of our body attended the inquiry, the result of which was to confirm us in our decision and to satisfy us that by cutting off the same number of days at the end of the season, as we were giving to the nets at the commencement, no injury would result to the angling interests. Indeed so much did this view appear to prevail amongst those who opposed the early opening, that on this occasion they voluntarily abandoned their application to put back the season to the 1st February.

Salmon in the prime condition are to be found in different rivers, at totally different seasons, in some as early as December and January—in which months, prior to the Act of 1842, they were allowed to be taken—whilst in others they are not to be had until June, July, and even so late as August. To adopt a uniform season for all rivers would be as absurd as passing a law to prevent a farmer reaping his crop when ripe, because in other parts the same description of crop was not ready for the sickle. The principle of uniformity of seasons for all rivers was first recognised by the Act of 1842, and many fishery proprietors suffered considerable loss thereby; but after a sufficiently long trial it proved a failure, and the Commissioners then charged with administering the laws began to make changes more suitable to the natural condition of each river.

Although the opening of the Sligo river has caused dissatisfaction for the present amongst some of the upper proprietors, yet we believe that when sufficient time has elapsed to give the new season a fair trial, the result will be to show a large increase in the quantity of salmon in the river both for nets and rods.

In Ballyshannon District we have restricted net fishing till 1st March, instead of 4th February, as heretofore. The Bundrowes, in this district, like the Sligo is an early river, and we should probably have made the season for nets to commence on the 1st January, but that by so doing we should have deprived the lessee of a great portion of his most valuable fishing, by closing on the 15th July. Since the free gap was opened, the weir on this river has become almost inoperative as a means of capture, and the lessee has to depend now nearly altogether upon what he can take by nets at the river's mouth, which can only be used in fine weather. In this river we have changed the season for rods, to commence on 1st January instead of 1st February, and to end on 30th September instead of 1st November as heretofore. We have further closed all angling in the district on 30th September, except in those rivers on the north side of Donegal Bay, where it will commence on 1st March and end on 9th October; on the Bunduff river, commence 1st February, and end 30th September.

In the Drogheda district the only alteration we have made is to close angling on 15th September.

In Letterkenny district—in the Leenane or Rathmelton river, which is also like the Sligo river, we have opened the season for nets on 1st January instead of 4th February as heretofore.

In Coleraine the only change made has been to close the angling on 19th October instead of 1st November.

A strong feeling prevails in the country that, except in some exceptionally late rivers, the month of October should be closed to rods, as well as all other engines. There can be no doubt but that the Act of 1863, allowing rod fishing to continue till 1st November, was productive of serious damage to the fisheries of many valuable rivers, as in consequence very large quantities of salmon in a breeding state have hitherto been taken; this we shall endeavour to prevent in any new arrangement of season which we may make.

The question of close season is one which requires the greatest care and consideration. However desirous we may be to do that which is for the public good, yet, as we may be led into error, we should be very glad if the Legislature clearly granted the same power of appeal against close season orders, as already exists in respect of By-laws. At present this question appears to be doubtful.

There is only one other matter connected with this subject upon which we think it would be of great importance to secure direct legislation, viz.—To prohibit any person exposing, or having in possession for sale, any salmon or trout taken between certain dates, say 15th September and 1st January. This would remove the temptation to kill fish by nets up to the end of the angling season. We feel assured that anglers having any interest in the fisheries would not object to be prevented selling their fish after the 15th September.

BY-LAWS.

In the Appendix will be found an abstract of all the By-laws made by us up to the end of 1871. In our last report we dealt fully with this subject, and to this we have nothing to add. In no case during the last year has there been an appeal against any By-law we have made.

Definition of Mouths of Rivers and Estuaries.

During the past year we have altered the following :—

The mouth and estuary of the River Moy, on the application of Robert Orme, and the mouth of the River Boyne, on the application of the Conservators of the district.

The effect of these re-definitions, and those contained in our report for 1870, has been as follows :—

1. In the case of the Bush, to restore two bag-nets which had been previously legally erected under 18th sec. 5 & 6 Vic., c. 106, in a several fishery, but which had been rendered illegal in consequence of being within the line made by our predecessors as defining the estuary of the river under 3rd section of 26 & 27 Vic., c. 114.

These nets are now erected by the owner of the river, and are situated respectively 600 and 1,300 yards on either side from the mouth of the river.

2. In the case of the Cloonaghmore, to restore two bag-nets, the property of Mr. William Little.

These nets had been declared by the Court of Queen's Bench, on appeal, to have been legally erected under the 19th sec. 5 & 6 Vic., c. 106, but were prohibited by the same section and Act before referred to, as being within three miles of the mouth of the river as defined by our predecessors. Under the new definitions made by us, they are now erected more than three miles from the mouth of the river.

3. In the case of the Moy River, to restore three bag-nets, the property of Mr. R. Orme, which had been declared by the Court on appeal to have been legally erected under 19th sec., 5 & 6 Vic., c. 106, but which were prohibited as being within the estuary of the river as defined. They are now erected more than three miles from the mouth of the river, on Mr. Orme's property.

4. In the case of the Boyne the only alteration made was to define the mouth of the river by a line drawn across the river at right angles with its banks instead of obliquely, as previously defined. The only effect has been to cause stricter regulations to be observed amongst the fishermen, who fish on their common-law rights with moveable nets outside the distance of half a mile from the river's mouth.

The above are the only alterations we have made in the definitions of mouths of rivers and estuaries. Against our decisions, not only have no appeals been made, but we have not received an intimation of dissatisfaction from any parties whatever, having an interest in any of these rivers.

FIXED ENGINES.

In the Appendix will be found a schedule of all the certificates which have been issued for fixed engines, up to the end of last year, showing the places and districts in which they are situated, the names of the persons to whom the certificates were granted, and the description and size of the engines.

The total number is 107, viz., 42 for stake-nets, 28 for bag-nets, 1 for fly-net, 3 for head weirs, 2 for walls or stone weirs, and 31 for fixed draft-nets.

Of these 107 certificates, our predecessors issued certificates for engines declared by them to be legal, 22 for bag-nets, 3 for head weirs, 1 for fly-net, 6 for stake-nets, and 2 for walls or stone weirs, total, 34. We have since issued the following :—

For engines declared by the Court of Queen's Bench to be legal, on appeal against the decisions of the Special Commissioners—24 for stake-nets, and 3 for bag-nets.

For engines, the legality of which was determined by the Special Commissioners, but no certificates previously issued—3 for bag-nets, and 2 for fixed draft-nets.

For engines declared legal by the Court on appeal from magistrates—1 fixed draft-net; and for engines which on inquiry we found to be legal under decisions in similar cases made by the Court—12 for stake-nets, and 28 for fixed draft-nets.

Of the 28 fixed draft-nets, 9 were for nets to be used in estuaries of rivers, where the breadth of the channel was less than three-quarters of a mile wide. The proofs we required in these cases were—1st, a several fishery in the *locus in quo*; 2nd, that the engines were established for ten years before the passing of the Act of 1842; and 3rd, that they were legally erected in 1862.

In the other 19 cases the parties proved to our satisfaction at public meetings, that they were entitled under the 18th or 19th sections of 5 & 6 Vic., c. 106, to maintain fixed engines, that either similar nets or bag-nets were erected and used in the same places in 1862, and that the engines for which they claimed certificates were not injurious to navigation or the public right of fishing; these 19 cases and the 12 cases of stake-nets were established—under the decisions of the Court of Queen's Bench in the case of *Stewart and Cubitt*, and the Court of Common Pleas in the case of *Williams and Boyd*—in the room of bag-nets which had legally existed in 1862, but had been rendered illegal by the 3rd section of 26 & 27 Vic., c. 114.

Previous to granting any certificate, we held public inquiries; ample notice having been always previously given of the inquiry. These inquiries were attended by all of us, and in many cases the parties making claims, and those opposing them, were represented by some of the most able members of the bar. The following is a summary of the certificates issued :—

SUMMARY.

Total Number to 31st December, 1871,	107		
Being for Stake Nets,	42		
„ Bag Nets,	28		
„ Fly Nets,	1		
„ Head Weirs,	3		
„ Stone Walls or Baulks,	2		
„ Fixed Draft Nets,	31—Total,	107	
Issued by the Special Commissioners for Engines declared by them to be legal—			
For Stake Nets,	6		
„ Bag Nets,	22		
„ Fly Nets,	1		
„ Head Weirs,	3		
„ Baulks,	2—Total issued by the Commissioners,	34	
Issued by the Inspectors for Engines the legality of which were determined by the Special Commissioners—			
For Bag Nets,	3		
„ Fixed Draft Nets,	2—Total,	5	
Issued by the Inspectors for Engines condemned by the Special Commissioners, but afterwards declared legal by the Court on appeal—			
For Stake Nets,	24		
„ Bag Nets,	3—Total,	27	
Issued by the Inspectors for Engines declared legal by the Court on appeal from decision of Magistrates—			
For Fixed Draft Nets,	1—Total,	1	
Issued by the Inspectors for Engines found on inquiry by the Inspectors to be legal—			
For Stake Nets,	12		
„ Fixed Draft Nets,	28—Total,	40	
Total issued by Inspectors,			73
Total,			107

A schedule of all the fixed net inquiries held by us, showing the result in each case, will be found in the Appendix.

Against our decisions there have been four notices of appeal. In one our judgment was affirmed; in another the Court decided that an order made by our predecessors condemning the weir as injurious to navigation, should not be a bar to our granting a certificate; and the other two have not, up to the present, been proceeded with. The case in which the Court decided that the order made condemning the weir should not be a bar to our granting a certificate, requires a few detailed observations. It is that of the Ballynatray stake-net or Scotch weir in the River Blackwater, the property of the Honorable Charles William Moore Smyth. The channel where the weir is situated is under three-quarters of a mile wide. An investigation by the Special Commissioners as to its legality was held in 1864, and by the records in this office, it was found and declared to be injurious to navigation. In the order made up and signed by them, and which alone could be recognised, they condemned the weir, and ordered it to be abated, as being "illegal," but without showing on the face of it upon what grounds. The weir was, if not altogether abated, certainly not fished until 1869, when it was re-erected and fished; and on the hearing of a complaint brought at our instance against the owner for re-erecting a weir which had been condemned and ordered to be abated, the magistrates declined to convict, on the ground that the order was defective in form in not specifying the grounds upon which it was made.

The 32 & 33 Vic., c. 92, was subsequently passed in the same year (1869), and the 16th section imposed a heavy penalty on any person erecting or using any fixed engine without first having obtained a certificate from the Special Commissioners under the provisions of the Act of 1863, or a certificate from us, *in regard to such fixed engine*. The owner applied to us for a certificate, but this we refused, on the ground that the weir had been tried and condemned by our predecessors. He thereupon moved in the Court of Queen's Bench for a writ of *certiorari* to bring up, in order that they might be quashed, all the orders made by the late Commissioners in respect of the weir. The case was argued before the Court by counsel on behalf of the Crown and the Duke of Devonshire, in opposition to Mr. Moore Smyth. It was admitted that the order made by the Commissioners to condemn the weir, was upon the ground of its being injurious to navigation, and not for want of title; and by consent of the parties on both sides, and of the Court, the order was amended accordingly, declaring the weir to be injurious to navigation and to be abated accordingly. Subsequently Mr. Moore Smyth again demanded from us a certificate, or an inquiry to ascertain if the weir as it then stood or as fished in 1869 was injurious to navigation. We declined granting the certificate, on the grounds that an order was in existence condemning the weir; and as to the propriety of acceding to his request to hold an inquiry, we decided on taking the advice and opinion of the Law Officers of the Crown for our guidance.

They were of opinion that, under the circumstances, we should grant the inquiry, upon which we issued notices and advertisements calling a meeting at Lismore to inquire into the claim. At this meeting eminent members of the bar appeared before us on both sides, and, after a good deal of legal argument, the order made by the late Commissioners in 1864, as amended, was put in evidence on behalf of the Duke of Devonshire, who opposed the application; and it was urged that we were precluded from proceeding further in the matter by the provisions of the 17th section of 13 & 14 Vic., c. 88, which enacts, that if after any order or decision of any judge of assize, or after any order or decision of any court whatever for abating or removing any fixed engine, unless and until the same shall be reversed on appeal, any person shall re-erect, use, or fish with any fixed engine, or any part thereof in or adjoining to any place where it may have been decided that any such fixed engine should be abated or removed, the Commissioners or any two justices shall by warrant abate and remove the same, and the party shall be liable to a penalty of £20, and £10 a day.

We took this view of the law, and decided that "the order" was a bar to our proceeding further. Against this decision an appeal was taken, and after argument by counsel, the Court directed the case to be remitted to us to proceed with the inquiry already entered upon, and that in so proceeding we should—notwithstanding the order of August, 1864, as amended—inquire into and report whether the weir *as fished in 1869* was injurious to navigation, or whether, if injurious to navigation, the injury could be removed by any and what partial abatement of the weir.

In obedience to this order we called a further meeting, and confined our inquiry to the question directed by the Court, viz., whether the weir as fished in 1869 was injurious to navigation; and after an inquiry lasting over six days, we unanimously decided that the weir as fished in 1869 was not injurious to navigation, and reported

to the Court accordingly. After further arguments before the Court an order was made directing us to proceed with the inquiry as to Mr. Moore Smyth's right to a certificate—the Court declaring that the order of 15th August, 1864, as amended, did not establish the illegality of the weir, and that it was not any bar to the claimant's title to the weir, or to his obtaining a certificate therefor.

Having already investigated the title in the course of the inquiry, we at once reported to the Court that Mr. Moore Smyth had given us sufficient proof of title to erect and maintain the weir, and that after the order of the Court he was entitled to a certificate—subject to any appeal which might be brought against our decision—and upon this a certificate was issued. No appeal was brought, and the weir is now fished regularly and is a valuable property. This is the only case in Ireland where we have granted a certificate for a weir which had previously been condemned by a decision of our predecessors, which had remained unappealed from.

FISH PASSES.

During the past year the Fish Passes referred to in our last Reports have been built by the Board of Works at Rooskey, Jamestown and Knockvickar, in the river Shannon. Plans prepared by our engineer were supplied from this department. Since their completion the river has been too swollen to allow them to be inspected by us, or to ascertain if they are effective.

Complaints continue to be made of the inefficiency of those erected at Athlone and Tarmonbarry, which certainly do not comply with that part of the law which directs that all dams erected in rivers since 1842 shall be so built as to allow the free run of fish in one or more places at all periods of the year. We have referred to this matter particularly in our last Report. The weirs in their present state are obstacles to the free run of fish; but as stated in that Report, we have no power to compel new passes to be constructed. We have, however, had a design prepared for a pass on Tarmonbarry (which is the worse weir), and if constructed, we believe it would prove efficient. Unless, however, the necessary funds for building it are subscribed by persons interested in the fisheries of the river, we are unable to do anything to facilitate the ascent of the fish over this weir; and, independently of the many illegal practices which it causes by detaining the fish below it, they are shut out during a portion of the year from a great extent of waters which would otherwise be valuable both for sport and breeding purposes.

MILLS AND GRATINGS.

As we anticipated, the great outcry raised against the clause, in the 32 and 33 Vic., c. 92, which required gratings to be placed on mill leads and tail races, except where we granted an exemption, has subsided. Millers have seen that we have been most careful only to enforce the provisions of the Act when it could be done without injuring their water power, and whilst the clause has proved in many cases to be most valuable to the fisheries, we have not, by a too stringent enforcement of it, in a single instance, caused damage to the milling interests.

Designs for gratings and lattices have been prepared by our engineer, and we have supplied them to all persons interested where gratings were required to be erected.

LOCAL MANAGEMENT.

In most cases we continue to receive from the Boards of Conservators cordial co-operation. We have attended their meetings as often as practicable, to confer with them as to the best means to be adopted for the regulation, protection, and improvement of the fisheries, and have found a general disposition to adopt suggestions for their advancement.

The pressing difficulty under which they all labour is want of sufficient funds to provide for proper development and protection. Those now available are totally insufficient, although we have endeavoured by every legitimate means in our power to increase the amount.

In our last report, we remarked upon the increase in the amount received as compared with the preceding year, and, as stated in a previous part of this report, the funds received for the year 1871 exceeded by £1,354 the largest amount ever received in

Ireland for licence duties. Still the amount is insufficient to afford that protection, particularly in the winter season, which is so essential for the development of the fisheries.

The following return shows in detail the total increase and decrease upon the various engines used, resulting as above:—

INCREASE.				DECREASE.			
	£	s.	d.		£	s.	d.
On Rods - - - - -	668	0	0	On Pole Nets - - - - -	2	0	0
„ Cross Lines or Snap Nets - - - - -	93	15	0	„ Coghills - - - - -	6	0	0
„ Draft Nets - - - - -	68	10	0	„ Loop Nets - - - - -	2	10	0
„ Drift Nets - - - - -	214	0	0	Balance over that received in 1870	1,354	2	5
„ Trammel Nets - - - - -	14	0	0				
„ Stake Nets - - - - -	150	0	0				
„ Gaps or Eyes - - - - -	14	6	8				
„ Ratings in excess of Licences - - - - -	223	0	9				
	£1,364 12 5				£1,364 12 5		

The question of increasing the rates of duty on certain descriptions of engines used for the capture of salmon, has received from us very careful attention. Some engines in certain localities are too heavily taxed for the quantity of fish they are enabled to capture, whilst in other fisheries they could fairly bear a much heavier licence duty. There are also engines not enumerated in the schedule to the Act on which much larger licence duties should be imposed. Legal difficulties, however, exist in the clauses of the Act, which render it impossible for the Boards of Conservators, with our concurrence, to impose duties proportionate to their value. For example, the statute directs that the maximum licence on a drift or draft net shall be £3. In some places this is quite too small, whilst in others half that amount would be ample. Again, there is a description of net used in some parts of Ireland called a fixed draft net, or half tram, which would require a special rate of licence duty commensurate with its powers of capture, which in some localities are very great.

It is with regret that we feel compelled to mention one matter connected with the application, or, we might say, the misapplication, of the funds of a district, which we think should not be permitted. Early in 1871 it was discovered, on examining the accounts of the Killarney District, that a sum of £13, collected by a Licence Distributor, had not been paid in to the credit of that Board. In July of that year we urged upon the Killarney Board that proceedings should be taken to recover this money, but no action having been taken up to February of this year, the question was again pressed upon that Board by us, but up to the present time no steps have been taken to enforce payment, and they have intimated their intention of not taking any proceedings to recover the money.

NEW LEGISLATION.

We adhere to the opinion expressed in our former report that the time has not yet arrived for a consolidation of the various Acts relating to the fisheries. There are, however, a few matters on which it would be found of great advantage if a short Act were passed dealing with the following points:—

1st—To remove any doubts as to an appeal against our decisions on the subject of close seasons.

2nd—To prohibit the sale of salmon between 15th September and 1st January.

3rd—A re-arrangement of licence duties.

4th—To define distinctly what is meant by unseasonable salmon.

5th—To provide that all appointments and dismissals from the office of Clerk of Conservators or Inspectors, shall be subject to the approval of this department.

In conclusion, we feel called upon to notice the ready assistance and co-operation at all times afforded by the officers and men of the Coast-guard, and the Royal Irish Constabulary—which have been most valuable, and without which the fisheries would have suffered considerably more than they have already done, from insufficiency of funds for protection; and we are glad to have this opportunity of expressing to your Excellency how much we are indebted to both departments for their co-operation, and our hopes

that nothing may be permitted to interfere with the active aid on all occasions given by them, which, if it occurred, would prove a most serious loss to the fisheries, and consequently to the public generally.

We regret that this report has not been submitted at an earlier date to your Excellency—the delay has been caused by unusual pressure upon our time, and the difficulty and delay in collecting statistics.

We have the honour to be,

Your Excellency's obedient servants,

JOS. HAYES.

J. ALOYSIUS BLAKE.

THOS. F. BRADY.

ALAN HORNSBY,

Secretary.

Office of Irish Fisheries,

12, Ely-place, Dublin,

6th August, 1872.

NOTE.—Since the foregoing was written, an important decision of the Court of Queen's Bench has been made, which, in effect, establishes the powers of Magistrates to review our decisions (even though unappealed from), as to the granting of certificates for fixed engines, &c. Owing to certain words in the 26th and 27th Vic., cap. 114, there is no finality in any certificates granted, and without which no fixed engines can be used. This should be remedied.

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STATE of the REGISTRY of FISHING VESSELS on the COAST

N.	NAME OF DIVISION.	BOUNDARIES.	Registering Officer.	1st Class employed in 1871.			2nd Class employed in 1871.			3rd Class employed in 1871.		
				Vessels.	Men.	Boys.	Vessels.	Men.	Boys.	Vessels.	Men.	Boys.
1	Dublin,	Howth to Greystones, . . .	Captain Henry Hand, R.N., .	88	447	84	77	272	38	62	243	29
2	Arklow, .	From the breaches three miles north of Five-mile-point Station, county Wicklow, to the sluices three miles south of Cahore Station, county Wexford.	Vincent Williams, Com- mander, R.N.	-	-	-	293	1,635	21	46	201	13
3	Wexford, .	Morris Castle to Bannow, county Waterford.	Thomas Hooper, Com- mander, R.N.	22	126	-	178	781	22	40	182	-
4	Waterford, .	From East Bank of Bannow Ferry, county Wexford, to Ballyvoile Head, north of Dungarvan Har- bour, county Waterford.	William B. Stubbs, Com- mander, R.N.	9	30	8	143	496	16	44	76	5
5	Youghal, .	From Ballyvoile Bridge, county Waterford, to Garryvoe (in Bally- cotton Bay), county Cork.	John R. D. Cooper, Com- mander, R.N.	6	34	2	92	430	23	26	187	1
6	Queenstown,	From Garryvoe (in Ballycotton Bay), westward to Ringabella Bay, in- cluding Queenstown Harbour, co. Cork.	J. Hall Robeck, Commander, R.N.	7	36	1	81	305	6	101	364	21

INSPECTORS OF IRISH FISHERIES.

19

No. 1.

of IRELAND from 1st January, 1871, to 1st January, 1872.

Total employed in 1871.			Substance of Observations made by Inspecting Commanders of Coast Guards and other Registering Officers, up to the 1st January, 1872.	No.
Vessels.	Men.	Boys.		
227	962	151	General condition of fisheries in this district much the same as last year. Winter take of herrings improved. No spirit of emigration exists. This past year has been less productive in the take of fish than the preceding one. There are no oyster fisheries in this division. There is a curing establishment at Howth; but most of the fish is sold fresh. There are no ice-houses in the division. No instances of conflicts between persons pursuing different modes of fishing have occurred. The fishermen are in this division orderly and industrious. The registration of vessels is satisfactory. Trawling is practised in vessels of from twenty to twenty-seven tons, in from twenty to forty fathoms of water. The number of trawlers is about the same as last year. There are about half a dozen boats employed in seine, trammel-net, and line fishing. The herrings captured are sent to England; some are sold in Dublin; others, on the spot, by auction. Cod is the fish generally captured by the trawl, and November is the best season. The quantities of fish frequenting coast for the last five years is about the same. Boats here appear well provided with gear, &c. The means of transit to market for sale of fish is good. No complaints of high charges for transit. The principal harbours in division are Kingstown and Howth. The most accurate statistical information could be obtained by an agent for that purpose. Has no suggestions to offer with reference to the improvement of the fisheries. No large shoals of fish, such as herrings, mackerel, or pilchards have appeared off this portion of the coast. Adequate means exist for capture of such fish as appear off the coast in quantity.	1
339	1,836	34	Fishing improving at Arklow, Wicklow, Courtown, and Cahore, where fishermen own little or no land. Slight improvement where they hold from one to twenty acres, and none where they hold from one to five acres. There is slight improvement in the fisheries during past year. Prospect good. There is slight improvement in boats and gear at Courtown; but harbour is much out of repair and at times most difficult of access, and boats have often to run for Arklow and remain there a considerable time, and at great expense to themselves, as the money they have earned is thus spent away from home; and should the harbour not soon be repaired, fears the fisheries in the locality will fall almost entirely away. No spirit of emigration exists here. Fishermen can always find employment. Last year has been more productive on the whole than the preceding, especially at Courtown and Cahore, in the cod fishing. Herring fishing not quite so good from Wicklow to Ballymoney. There are natural oyster beds off Arklow, Ballymoney, Kilmichael, and Courtown. Arklow has been this year less productive; Kilmichael about the same; and Ballymoney less, as also Courtown. The general quality of the oysters is good. Prices average from 13s. to 18s. per barrel. Quantity sold at Arklow is not known; at Courtown about 200 barrels. Most of the oysters dredged by Courtown boats have been sold in Arklow market. No curing establishment in this division. Fish sold in fresh state. No conflicts have occurred between persons pursuing different modes of fishing. The fishermen are orderly and industrious, and almost entirely employed in fishing in the various seasons. Believe the registry of vessels and boats in this district to be good; have no suggestions to offer on the matter. The only trawling carried on in district is by Courtown fishermen; seven boats from there trawl occasionally; they are about eight tons burden, and trawl in from four to eight feet of water. The number of boats trawling is the same this year as last. The tonnage of boats employed in seine, trammel-net, and line fishing varies at Wicklow from one to ten tons. Ballymoney, there are four boats from two to twelve tons; Courtown, four boats, from two to ten tons; Cahore, five boats, two to five tons. The fish captured is sold in local markets; the greater portion sent by Dublin, Wicklow, and Wexford Railway, as far as Dublin, north, and Enniscorthy in the south. There are frequently five or six steamers at Arklow, waiting to convey the fish caught to England. At Wicklow, salmon and white trout are captured by seine nets, also bass and herrings; with line—cod, pollock. At Arklow, herrings and oysters only. Kilmichael and Ballymoney, herrings; and with line, cod. Courtown, with seine nets, herrings; line, cod and sometimes turbot; trawling, soles and plaice. Cahore, herrings by seine nets; cod by line. Cod is in best condition at Wicklow from October to March. At Ballymoney, cod is in best condition from November to January. At Courtown, trawl fish in best condition July and August; cod from November to January. Cahore, cod best condition November to January—this year about the same as the past three years as regards capture. Does not consider the fishermen would be benefited by loans as a rule. The boats are tolerably good and improving; the gear is good. Security for loans would be difficult to find, and is of opinion would increase improvidence. The means of transit are very good, all ports where fish are landed being within easy distance of Dublin, Wicklow, and Wexford Railway. No complaints exist of the charges for transit. The harbours in division are—Wicklow, which is partly natural and partly artificial, and is being improved; it can accommodate vessels of 250 tons after being lightened. Arklow, partly natural and partly artificial; vessels of ninety tons can lie there, but it is in bad repair. Courtown, partly natural and partly artificial, accommodates boats up to eight tons, is also in bad repair. At Cahore the beach is sheltered by a stone pier, under the lee of which flat-bottomed boats are hauled up on sand. The most accurate statistics would be obtained by appointing some competent person and making it obligatory on every holder of a register of a fishing boat to report after each trip the quantity and description of fish taken. Has no suggestion to offer as to improvement of sea fisheries. No doubt if Arklow and Courtown harbours were repaired the fishing at these places would improve. No shoals of fish, such as mackerel, herrings, or pilchards, have been observed off coast of this division.	2
240	1,089	22	The general condition of the fisheries appears to be about the same as last year. Many of the fishermen on the coast hold small patches of land. Some improvement appears to have taken place, and present prospects on the whole appear better. No spirit of emigration among the men. Last year the take was more productive than the preceding. The herring fishery has never been equalled here. The Wexford oyster bed is nearly exhausted, but Ballyrallon is thought to have improved. In last August a new bank was discovered outside north end of Longbank. Oysters large size, 20s. per thousand. About 250 tons of oysters sold during last year, worth £1,050, exclusive of what has been taken by Jersey and Arklow boats. No curing establishments. Fish all sold fresh. No ice-houses. Fishermen peaceable, orderly, and well-conducted. The able-bodied generally employed fishing. Registry of boats perfect. About ten boats, of from fifteen to twenty tons, trawl all the year round. About the same number of boats only trawl during the summer months. Depth of water, six fathoms. The general tonnage of boats employed in seining is from one to five tons. Seine boats all employed on river. The better sorts of fish are generally sent to Dublin and Liverpool. Sole, turbot, and plaice captured by the trawl; plaice, gurnet, codling, by the seine; codling, pollock, and bass by long line. Boat-owners would be benefited by loans. Security could be procured. Transit at present imperfect to Dublin. Not aware of any complaints of high charges. If boat-owners were called on to furnish returns of fish, statistics would be more perfect. Large shoals of herrings during last season appeared off coast. Fair means exist for ordinary captures.	3
196	602	29	General condition of fisheries as to boats and gear much the same as last three years. Most of the fishermen hold land, from half an acre to three acres. No perceptible improvement within last year, and present prospects are dull. The spirit of emigration depends upon the demand for labour. If that were obtainable, considers, in the majority of cases, the men would remain at home. The take during the year is said to be about the same as the preceding year. Oyster fisheries are indifferent. The only natural bed is off Duncannon, Waterford rocks. It has so much diminished of late years as to be now entirely neglected. Oyster fisheries are not improving. Spawning season no better than last year. No new banks have been discovered. E. Power, esq., added to his stock of oysters last year 4,500. The quality of the oysters is indifferent. Price is about 8s. per 100. Can form no idea of quantity sold. There are no curing establishments in this district. All fish sold fresh. Not aware of any conflicts taking place between persons following different modes of fishing. The fishermen are orderly and well-disposed, and when not fishing devote themselves to the cultivation of their land. Is not aware of any better system of registration of vessels and boats. About thirty trawlers in this division, from five to fifty tons, and trawl in from fifteen to twenty fathoms. Size of meshes of trawl about one and a-half inches. The number of trawlers is about the same as last year. The size of boats engaged in seine and trammel net and line fishing is from half a ton to twenty tons, and there are about 187. The fish captured is sold in the local market. The fish captured by the trawl are plaice, turbot, sole, brill, flat fish, and skate, and are in best condition in summer; by seine nets, mackerel, herrings, sprats, gurnets, best condition in summer; by trammel net, hake, best in summer and autumn; by lines, cod, ling, whiting, pollock, best condition in autumn. There has been a decrease during the past five years in the fish frequenting this coast, principally in hake, herrings, and sprats. Does not consider the fishermen in this locality would accept loans, or be able to find security. Means of transit to market are good. Not aware of any complaints of high charges for transit. The harbours in this district are St. Reanon's, natural, and capable of containing vessels of thirty tons; Fethard, Mede Docks, Dunmore, and Duncannon, partly natural and partly artificial, and capable of containing vessels of thirty tons. Best means of obtaining correct statistical information as to quantities of fish taken and disposal of same, would be by having paid agents at the different stations. No suggestions to offer with reference to the improvement of the sea fisheries. No large shoals of mackerel or pilchards, or herrings, have been observed off the coast. Adequate means exist for the capture of such fish as have appeared off the coast.	4
124	651	26	A portion of coast from Glencorillon to Ballycreegan is unguarded; all the boats in this portion are registered, and are included in the annexed return. No improvement has taken place in the last three years in this district as regards boats, gear, &c., &c. Most of fishermen have from one to fifteen acres of land. No sign of improvement within the last year, but present prospects are fair. There is a spirit of emigration prevailing in this district, but it is supposed the men would remain at home if fully employed. Not much difference in the take of fish; last year slightly more productive in capture of sprats. No oyster fisheries in this district. There was formerly a curing establishment at Helvieck Head, but it has now fallen into decay. Fish are now sold in fresh state; no curing-houses now exist in district. No conflicts have occurred between persons following various modes of fishing; the fishermen in district are orderly and industrious. Registry of vessels and boats in this district is perfect—about twenty-six boats, ten to twenty tons, trawl in two to twenty fathoms of water. The number of trawlers is greater this year than last. About 105 boats engaged in seine, trammel net, and line fishing, and vary from one to twenty tons. Fish captured is all sold locally. Fluke, sole, turbot, plaice, haddock, are captured by trawl; herrings, sprats, pilchards, mackerel, by seine; bream, gurnet, whiting, and cod, by line. There is generally supposed to be a decrease of all kinds of fish frequenting coast during last five years. Loans might benefit the fishermen, but it is doubtful whether security could be procured. The means of transit of fish to market is good. No complaints exist of the high charges of transit. The harbours in this division are Ballymagouli Pier (Dungarvan Bay), artificial, and can accommodate twenty-ton boats. Helvieck requires increased accommodation; Ardmore requires a harbour for fishing craft. Fish merchants and owners of boats give a return of the fish captured, and how disposed of. Have no suggestions to offer with reference to the improvement of the sea fisheries. Shoals of mackerel and sprats have frequented Dungarvan and Ardmore Bays. The means of capture is not adequate for the quantity of fish off the coast.	5
189	705	28	All portions of coast within this division are guarded; all registered boats are included in the annexed return. There is no improvement in condition of the fisheries as regards boats, gear, &c., &c. Nearly all the fishermen hold from three to seventy acres of land. Improvement during past year, and increase in number of boats, owing to greater abundance of fish on coast. Should this continue, the present prospects may be called good. Spirit of emigration among the fishermen prevails strongly; married men with families, and having employment, remain at home; those unmarried wish to emigrate, whether employed or not. Last year has been more productive than the preceding, taking into consideration the	6

STATE of the REGISTRY of FISHING VESSELS on the COAST

No.	NAME OF DIVISION.	BOUNDARIES.	Registering Officer.	1st Class employed in 1871.			2nd Class employed in 1871.			3rd Class employed in 1871.		
				Vessels.	Men.	Boys.	Vessels.	Men.	Boys.	Vessels.	Men.	Boys.
7	Kinsale,	From Myrtleville Point East, to Galley Head West, county Cork.	J. W. Carter, Commander, R.N.	42	287	41	143	648	41	262	1,133	65
8	Skibbereen, .	From Galley Head to Snave Bridge at the head of Bantry Bay, county Cork.	E. H. Hartwell, Commander, R.N.	9	58	5	259	1,301	110	359	2,090	118
9	Castletown Berehaven.	From Snave Bridge, county Cork, to Kenmare Bridge, county Kerry.	William Vicary, Lieutenant, R.N.	-	-	-	53	214	10	628	2,202	163
10	Killarney, .	From Kenmare (S.), to Blennerville Bridge (N.), county Kerry.	P. Mahony, Divisional Officer,	14	49	10	25	128	4	329	1,447	160

INSPECTORS OF IRISH FISHERIES.

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No. 1—continued.

of IRELAND from 1st January, 1871, to 1st January, 1872.

Total employed in 1871.			Substance of Observations made by Inspecting Commanders of Coast Guards and other Registering Officers, up to the 1st January, 1872.	No.
Vessels.	Men.	Boys.		
			<p>several modes of capture. Oyster fisheries in district not prospering, excepting the private bed off Rathcourney; natural beds exist off East Ferry Coastguard Station, and two in Carrigaline River, one off Ashgrove and one off Rathcourney. The bed at Rathcourney is improving, the rest are not. The spitting season at Rathcourney last year was better than the preceding; the rest not. No new natural banks have been discovered; steps have been taken to stock the licensed bed at Rathcourney. The quality of the oysters is good; price from 10s. to 14s. per 100, about 100,000 sold last year. No curing establishments exist in district; fish all sold fresh. No complaints about conflicts between fishermen following different modes of fishing. Fishermen here are orderly and industrious. Nearly all hold land, and work it when fishing is bad, or when agricultural prospects are good. Registry of vessels and boats nearly perfect, but some of the fishermen very careless about registering; assistance of police compelling them to register would be advantageous. About forty-three trawlers in this division, from five to thirty tons, and trawl in from three to ten fathom water; some go westward to Kinsale, and trawl off there. The number of trawlers is greater than last year. About 157 boats, from three to six tons and down to one ton, are engaged in seine, trammel net, and line fishing. Fish is sold in local markets and on beach. Sole, plaice, and sprats are taken by trawl; herrings, mackerel, and sprats by seine; trammel net and line—gurnet, pollock, ling and bream. Pollock and bream are in best season in summer; mackerel, scad, and hake from August to November; cod, ling, herrings, sprats, pilchards, haddock, from December to April. There has been an increase during the last year in cod, ling, herrings, and sprats, especially during months of November and December, 1871. With regard to loans, all the fishermen are in want of capital, but no security could be had for repayment of loans. Means of transit insufficient, especially from Ballycotton, where cod have been known to be sold for 9d. each from want of transport to market, where that price would at least have been troubled. No complaints exist of high rate of charges for transit. The harbours in this district are—Crosshaven, Whitegate, and Rathcourney, natural, and accommodate vessels of fifty and sixty tons. Ballycotton, Farrid, and Ballynacorney, artificial; the latter accommodates vessels of about fifty tons. Ballycotton is unfinished, and can accommodate but one vessel of sixty tons, and a few boats. Improvement and outlay, especially towards lengthening the piers, are much needed, and if carried out the fishery interests would be much benefited. Best means of obtaining accurate information as to quantities of fish taken, &c., would be by obtaining returns of fish sold in markets of Queenstown, Middleton, and Cloyne, and by the Coast-guard obtaining information themselves with the assistance of some of the older fishermen, at the sales of fish on the beaches at Ballycotton, Ballyroeneen, Poorhead, Gyreer; also by police ascertaining the number of cart-loads of fish that go from Ballycotton to Cloyne. Would suggest for the improvement of the sea fisheries of this division an improved transit from Ballycotton to Cloyne, improving Harbour of Ballycotton, and establish a telegraph there; advance sums of money to fishermen holding over twenty acres of land on the principle that Board of Works advances money for draining and improving land. Large shoals of herrings and an immense quantity of sprats came into Ballycotton Bay; about twenty cart-loads were despatched from Ballycotton in two days. Consider the means for the capture of such fish as appears off the coast inadequate.</p>	
447	2,068	147	<p>No portion of coast unguarded. All fishing boats included in annexed return. General condition of fisheries, as compared with last three years, as to boats and gear is good; boats and gear are improving. Some of the Kinsale fishermen hold land; some along the coast hold from two to twenty-two acres. No sign of improvement during past year. Emigration still prevails along the coast, but not from want of employment. Last year has been less productive in take of fish than preceding. Oyster beds, natural, exist at mouth of Bandon River; they are not improving; no licences have been granted; quality of oyster is very good; price varies from 4s. to 7s. per 100. Can form no idea of quantity sold. Several attempts have been made to establish curing houses, and with fair success; however about two-thirds of fish taken is sold fresh. Curing houses at Seilly, the World's End, Kinsale, and Courtmacsherry; cannot say if successful. One ice house at Kinsale holds about 100 tons. Ice is nearly always stored in old hulks hired for the purpose, being more convenient for packing the fish. No conflicts have occurred amongst the fishermen following different modes of fishing. The fishermen in this district are orderly and industrious, and at Kinsale are generally employed at fishing, but elsewhere follow agricultural pursuits. The registry of boats and vessels in this division is perfect. Twelve or fourteen trawlers, about eighteen to twenty tons, from Cork Harbour, trawl in from five to twelve fathoms; also yachts. Number of trawlers less than in preceding year. About 300 boats, of from two to three and a half tons, engaged in seine, trammel net, and line fishing. Very little fish sold in locality, nearly all, especially mackerel, sent to large towns. Plaice, sole, captured by trawl; seine, trammel net—plaice, mackerel, pilchards, &c.; by line—cod, hake. There has been an increase of mackerel and pilchards, and a great diminution of hake, cod, ling, during past five years, and haddock nearly extinct. Consider the fishermen would be much benefited by loans; fishing would be thereby advanced; some of them could obtain security. Principal harbours in this division—Oyster Haven, Kinsale, Courtmacsherry, all natural; from twenty to 220 ton vessels could lie therein; all require repair, and new piers. Consider that accurate statistics as to quantities of different fish captured, and the disposal of it would be obtained by having some competent person on the spot at the time the fishing season is going on, to attend to that alone. Have no suggestions to offer as to improvement of sea fisheries. During last two years large shoals of mackerel and pilchards from Robert Cove, E., to Galley Head, W., have been observed. Adequate means do not exist for the capture of pilchards. From statistics obtained during the fishing season, I find that from March to November, 1871, there was an average despatch of two steamers a day to Milford Haven, with an average of 300 boxes of mackerel per trip, each box two cwt.; the freight was 9s. per ton to London. A slight reduction for consignment to intermediate stations. Export to Holyhead, two steamers per week; average outlay was £1,500 per week; employing eight steamers and several cutters, and about 300 fishing boats, eight men in each, exclusive of thirty French boats, with thirty men and boys in each.</p>	7
627	3,444	233	<p>A portion of coast of this division unguarded, viz.:—from Three Castle Head to Carberry Island in Dunmanus Bay, and the eastern shore of Bantry Bay from Sheep Head to Snavo Bridge including Whiddy Island. About eighty boats are registered in this portion, and are included in table. The number of boats in this unguarded portion are given in table. The general condition of the fisheries in district as regards boats and gear are poor, as gear is not being renewed. Nearly all the fishermen hold small portions of land from half an acre to ten acres. From Crookhead an improvement within the last year as to gear is reported. Prospects improving—some idea at Castle Townsend of forming a company for capture, &c., of pilchards. There is a spirit of emigration prevailing amongst the fishermen of this district, except at Skull and Crookhaven, where it appears to be the opinion of the officers they would prefer remaining at home if employed. Last year has been generally less productive in the take of fish, except ling and hake. Oyster fisheries in this district are very poor—no large natural banks—a few small banks in estuary of Idin River and Lough Hine, but oyster fisheries are not improving. Spitting season, last year, about the same as previously. No new banks discovered. Dr. Hicks of Doreenra has stocked some portion of the ground in Roaring Water Bay, for which he obtained a licence. The quality of the oysters is fair—6s. a hundred from the public beds; the quantity sold is less than 9,000. No regular curing establishments exist, but a considerable quantity is cured by the cottagers for their own use. Most of the fish is sold fresh in the local markets. No conflicts have occurred between persons following different modes of fishing. Fishermen in this division are orderly and industrious; when not employed in fishing during the summer are about their farms. The registry of vessels is perfect; the system appears to work well. No trawling is practised in this division except at Skull and Union Hall, to which places the Cork hookers of from fifteen to twenty tons come, using trawls in from five to fifteen fathoms. Number of trawlers about the same as last year. The tonnage of boats employed in seine, trammel net and line fishing is from half a ton to thirty-five tons, and they number 561. The fish captured is, some of it, sold in the local markets, and some sent to Cork. The fish taken by the trawl are sole, turbot, plaice, skate, and haddock; by seine nets, mackerel, scad, pilchards, pollock, mullet; by trammel nets, hake, cod, ling; drift nets, herring and mackerel; by line, cod, conger eels, ling, bream, whiting, pollock, gurnet. Mackerel and herrings in season, March, April, and May. Seine net fish come into the creeks, &c., later in the year. All fish in best condition from August to October. Within the last five years pilchards have increased in quantity on this coast, but herrings, mackerel, sprat, scad, and haddock decreased. It is doubtful whether fishermen would be benefited by Government loans, and they would find it difficult to find the security. The means of transit for the fish to market are bad, and if improved would certainly lead to increased employment of men and boats. Have not heard of any complaints as regards charges for transit by railway. The harbours in this division are all natural except North Harbour, Cape Clear. They are Ross River, Mill Cove, Glandore, which would accommodate vessels of 300 tons; Castletown, also would; Barlonge, Baltimore, vessels of 300 tons; Sherkin, fifty tons; Cape Clear, fifty tons; Long Island would accommodate vessels of the largest size; Skull, vessels of 100 tons; Ballydeob, vessels of fifty tons; Whitehall, vessels of 300 tons; Crookhaven, ships of largest size; Bantry, vessels of 300 tons. No artificial harbours are required. It would be a difficult matter to determine by what means best, accurate statistics of fish taken and disposal of it. Only means could suggest is to remunerate fishermen for reporting to the coast guard. Consider that fishermen require instruction in the piscatory art, but good order prevails amongst them. No doubt that if people cunning in the capture and curing of pilchards were to establish themselves on this coast, they would succeed; at present the local fishermen object to take this fish, on the ground that their oiliness destroys and rots their nets. Large shoals of mackerel, scad and pilchards appeared last year. Adequate means do not exist for the capture of fish on the coast.</p>	8
681	2,416	172	<p>Portion of coast of this district is unguarded, viz., from Snavo Bridge to Bark Cove, and from Ardroom to Kinniel Bridge on the west. All boats in this portion are registered. Fisheries in this district as compared with last three years declining. Most of fishermen hold from six to ten acres of land. No sign of improvement in fisheries within the last year, and prospects are indifferent. A spirit of emigration is prevailing, which would not exist if men were fully employed. Last year was, as regards capture, less productive. No oyster fisheries in this division. No curing establishments exist in this division. No conflicts have taken place between the fishermen, who are very orderly and industrious. Registry of vessels is satisfactory. No trawling carried on. Nearly all boats are engaged in line fishing, and range from two and a half tons. Nearly all fish sold in local markets; some sent to Cork and Kenmare. Mackerel, scad, hake, cod, and ling are caught by line. June, July, August and September are the best months. During last five years there is an increase of pilchards, and a decrease of all other fish. Fishermen would not be benefited by loans. The means of transit of fish to market are not good. No complaints have occurred as regards charges for transit of fish by rail. All the harbours in this district are natural, and are Adrigole, Glengarriffe, Castletown, Lawrence's Cove, Kilmacklogue, Ardroom, and Ballycroose, all capable of accommodating any fishing vessels. Consider it would be most difficult to obtain accurate statistical information of quantities of fish captured. Large shoals of scad, mackerel, and pilchards, especially the latter, have appeared off coast, and in the harbours of Castletown, Ballycroose, and Ardroom; means of capture not adequate for fish frequenting the coast.</p>	9
867	1,623	174	<p>Portion of coast of this division unguarded, viz. from the Head to Ballenrainy River, including Blaaket Sound and Islands, Brandon Head to Blennerville Bridge, north shore of Castlemaine Harbour. I believe some of the boats on this portion of coast are registered, and included in return. Could not give those unregistered. Condition of fisheries about same; no improvement. Most of the fishermen hold land from half to thirty acres. No sign of improvement last year. Prospects as regards pilchard fishing good. A spirit of emigration prevails, but if employment could be had it would not in such a degree. Last year less productive in capture of almost all kinds of fish, except pilchards and mackerel. The oyster fisheries are fair at Sneem; no other beds worked this year. Only one natural bank, "Kenmare," in this division. The</p>	10

STATE of the REGISTRY of FISHING VESSELS on the COAST

No.	NAME OF DIVISION.	BOUNDARIES.	Registering Officer.	1st Class employed in 1871.			2nd Class employed in 1871.			3rd Class employed in 1871.		
				Vessels.	Men.	Boys.	Vessels.	Men.	Boys.	Vessels.	Men.	Boys.
11	Ballyheigue,	From Blennerville Bridge, Tralee (S.W.), county Kerry, to Glin (E.), county Limerick.	Mr. W. Daish,	1	3	-	17	50	1	36	99	1
12	Seafield,	From Ballymacrievan Point, South, to Lackless Head, North, county Clare.	W. H. Wright, Divisional Officer.	-	-	-	8	16	-	241	631	-
13	Galway,	From Lackglass Head, county Clare, to Mace Head, county Galway.	John C. Drew, Lieutenant, R.N.	7	19	22	245	880	14	114	304	-

INSPECTORS OF IRISH FISHERIES.

23

No. 1—continued.

of IRELAND from 1st January, 1871, to 1st January, 1872.

Total employed in 1871.			Substance of Observations made by Inspecting Commanders of Coast Guards, and other Registering Officers, up to the 1st January, 1872.	No.
Vessels.	Men.	Boys.		
			supply about the same. Spawning last season about the same. No new banks discovered. Mr. Mahony laid down 30,000 last March on his licensed ground, and is now preparing to lay down £300 worth more. Quality of oysters good; price, 7s. per 100. About 100,000 sold. A curing establishment was formed at Dingle, but it did not pay. All fish nearly are sold in fresh state. There is an ice house at Killorglin for salmon. Have not heard of any conflicts between fishermen. They are very orderly and industrious, and farm as well as fish. Registry of boats and vessels perfect. Trawling is carried on by sixteen vessels of from ten to forty-six tons, and trawl in three to ten fathoms, some in forty fathoms. Number this year about same as previously. Tonnage of boats is from one to three tons. Prime fish, i.e., salmon, turbot, sole, doree, cod, and large takes of mackerel are sent to distant places, but other kinds are sold locally, and cured for home consumption. The fish captured by the trawl are sole, turbot, brill, plaice, cod, ling, doree, and skate; by the seine net, salmon, mackerel, herring, pilchard, scad, and mullet; by trammel net, hake, whiting, gurnet, and pollock; by lines, whiting, bream, ling, cod, and conger. Sole, turbot, brill, &c., are in good condition from November to May; cod and ling in the spring months; and bream, whiting, gurnet, mackerel, and pilchard from June to November. There has been a decrease during the past five years in salmon, hake, and ling, and a large increase in pilchard and mackerel. Fishermen, no doubt, would be benefited by loans, and they would advance the fishing, but it is very doubtful if they could get security, as well-to-do people here know that one bad season would involve the security; and the fishermen have little or no possessions to fall back upon. Means of transit to market are slow and expensive; if they were improved, and less expensive, has no doubt the fisheries would afford more employment. The expense is a great hardship to the fishermen. The harbours in this district are Kenmare River, Port Magee, Valentia, Castlemaine, Dingle, Ventry, and Smorwick, suitable for craft of any size. No artificial harbours in this division. Considers the best means of obtaining accurate statistics of the quantity of fish caught at each district would be by a paid official, and that would be very expensive in this division, as he would require to be continually on the move. The only suggestions could make for the improvement of the sea fisheries are ready means of transit to market—a small premium to the persons making the best takes. Loans put aside for the reasons above stated. Large shoals of mackerel and pilchard on this coast the past and preceding year. Herrings not so plentiful. The means of capture are not adequate for the capture of fish which appear off the coast. There is a want of enterprise. If the neighbouring landed proprietors could be induced to erect fishing establishments, with curing establishments, after a season or two, when the people could see for themselves, all would go well. Fancy a pile of pilchards, thirty-five feet from the base to the centre, on Smorwick strand, and not even cars sufficient to take them away. Has seen, during inspections, the ditches full of fish rotting, that could not be cured.	
51	152	2	The unguarded portions of coast in this division extend from "Blennerville Bridge to Spa (in Tralee Bay) on the S. W." from "Ballygarry to Menigahane," and from "Lick Castle to Ballylongford," and the boats in these portions are all registered, and included in this return. No boats solely engaged in fishing. General condition of fisheries compared with last three years as to boats, gear, &c., fair. Six fishermen hold about six acres of land each. There has been a sign of improvement during last year. New boats and nets have been procured, principally, however, in Tralee Bay, and for oyster dredging. There is still a spirit of emigration prevailing, and it is very difficult to determine whether the fishermen would, if fully employed, remain at home. According to the general opinion, and taking into consideration the several modes of capture, last year has been more productive in the take of fish than the preceding. The general state of the oyster fisheries in Tralee Bay fair—bad in the neighbourhood of Tarbert. Natural oyster beds exist in Tralee and Ballylongford Bays. There has been an average supply; spawning worse than previous year. No new banks lately discovered. No private oyster beds near Tralee. Steps have been taken to stock the ground where licences have been granted for the establishment of private beds in the neighbourhood of Tarbert. General quality of oysters good. Price about £1 15s. per thousand. Quantity sold within the year about 2,220,000 in the neighbourhood of Tralee, and 110,000 in and about Tarbert. A curing establishment was formed in the neighbourhood of Tarbert, but it does not appear to have been attended with much success. All fish taken generally sold in the fresh state. No ice-houses in existence. No conflicts between persons pursuing different modes of fishing. Fishermen orderly and industriously disposed, but only partially employed in fishing. Registry of vessels and boats perfect. Trawling not practised. No seine or trammel net boats employed, about twenty in line fishing at Tralee, and five at Tarbert; average tonnage from one to sixteen tons. Fish captured at Tralee sold in local markets; that captured at Tarbert sent to other places. Fish generally captured by line are—mackerel, good from June to November; whiting, very good all the year round; pollock, very good in summer months; pilchards, very good whenever taken. By nets—herrings, very good whenever taken. Considers pilchards and herrings are to be found off the coast at all seasons of the year. There has been an increase during the last five years in herrings, mackerel, and pilchards; other fish at an average, which must remain the case as long as the fishermen are limited to their present appliances for capture. Is sure fishermen would be greatly benefited by loans, and the fishing would be advanced. Understands there would be no difficulty in procuring the necessary security. Means of transit of fish to market for sale good. An improvement would not lead to increased employment of men and boats. No complaints of high charges for transit. The harbours in district are—Tralee, natural harbour. Penit for vessels drawing ten feet; Spa and Barrow, where vessels lie on the mud at low water. Tarbert, fit for vessels of the largest tonnage; Glyn and Tallern, where vessels must lie on the mud at low water. No artificial harbours. Thinks the most accurate statistical information could be had of the quantities of the different kinds of fish taken, and the disposal of it, by making it compulsory on masters or owners of fishing vessels to furnish periodically a return embracing the required particulars. Considers the fishermen would meet with much more favourable results if they possessed the boats and gear to enable them to extend their fishing grounds. From experience in cruising round the coast for several years, has no hesitation in saying that the fish abound to an extent scarcely at present understood. All that would be required are energy and appliances to render the fisheries as productive as they are in other parts of the United Kingdom. Several large shoals of herrings, pilchards, and mackerel, have been reported by the Tralee pilots as seen off Brandon Head and the Maharee Islands. Large shoals have been also seen up the Shannon as far as "Beal Bar" during the past summer (1871). Adequate means do not exist for the capture of such fish as appear in quantity off the coast.	11
249	647	-	The unguarded portions of coast in this division extend from "Querrin to Carrigaholt," "Killyclogher Head to Foragh Point," "Corbally Point to Lough Donnell," "Annagh to Moy," and "Har's Head to Lackglass." Some of the boats in these portions are registered, and all included in this return. There appears to be no change in the condition of the fisheries as compared with the last three years. Most of the fishermen hold from one quarter to five and ten acres of land. There has been no sign of improvement within the last year. A spirit of emigration still prevails; thinks fishermen would not remain at home if fully employed. In some parts of division last year has been more productive in the take of fish than the preceding. The general state of the oyster fisheries is bad; there is a natural bank extending from Moyne to Barnard Point, and a small bank off Carrigaholt. Supply very scarce; spawning last season worse than previous year. No new natural banks lately discovered. No steps have been taken to stock the ground where licences have been granted for the establishment of private beds. The general price of the oysters from 5s. to 6s. per hundred. Cannot form any idea of quantity sold within the year. No curing establishments or ice houses exist. No conflicts have occurred between parties pursuing different modes of fishing. The fishermen are orderly and industriously disposed, and are generally employed in fishing when the weather permits. Registry of vessels and boats perfect. Trawling not practised. Canoes from one-half to three-quarter ton used in fishing. Fish captured all sold locally. No fish captured by trawl or seine. Mackerel taken in large quantities by trammel nets in September, October, and November; bream and pollock in the summer; ling and cod in winter. There has been a great increase of mackerel and pilchards off some parts of the coast in this division; but a decrease in other parts; there is no doubt, however, but there are plenty of fish, but the coast is too rough to make it a certainty. Considers fishermen would be benefited by loans, but doubts whether they could procure security; but it would be a trial to give them some encouragement. Means of transit of fish, by carts, to market for sale good. Does not think an improvement would lead to increased employment of men and boats. No complaints of high charges for transit. No railways in district. The artificial harbours are—Moyne, can accommodate boats of ten tons; Querrin, boats of twenty tons; Cappa, boats of any size; Carrigaholt and Kilbaha, boats of fifteen to twenty tons; Reenvella Bay, Ross and Tullig creeks; Seafeld Pier, if repaired, would accommodate hookers; Liscannor Bay affords shelter alongside jetty for vessels of fifteen to twenty tons. Considers the only means of obtaining accurate statistical information as to the quantities of the different kinds of fish taken, and the disposal of it, would be by appointing persons for that purpose. Has no suggestions to offer with reference to the improvement of the sea fisheries. Large shoals of pilchards and mackerel have been seen during the past year off Seafeld and Liscannor. Adequate means, suitable for canoes, exist for the capture of fish.	12
366	1,203	36	The unguarded portion of coast in this division extends from Kinvarra to Galway, and from Greatman's Bay to Mace Head. All boats on these portions are registered, and are included in return. General condition of fisheries has not altered during last three years. Nearly all the fishermen hold land. No sign of improvement, and present prospects much the same as last year. Emigration still continues, and fishermen would not remain at home even if fully employed. There is little or no difference in take of fish last year as compared with the preceding years. The oyster fisheries are in a fair condition, but large quantities of young oysters are sold, which will have the effect of thinning the beds. A natural oyster bank exists between Ballyvaughan and Galway; the general quality of the oysters is good. Price about 5s. per hundred. About 1,500,000 oysters were sold during past year. No curing establishment exists in the district. There have been disputes between the Claddagh men and trawlers; also, they object to boats fishing every day, as they consider it unlucky, and nothing will prevent these conflicts till the Claddagh men get rid of their superstitious ideas. The registry of boats is nearly perfect, the only way to improve it is to employ a person solely for that purpose. Trawling is practised in Galway Bay by seven boats, of from fifteen to forty tons, in water of twelve to twenty fathoms. The number of trawlers this year and last about the same. The boats employed in the seine and trammel net and line fishing vary from five or six tons, and number 360. A portion of the fish captured is locally sold, but most of it sent to Dublin. The trawl takes turbot, plaice, sole, brill, and all kinds of ground fish; the seine net and line takes cod, ling, pollock, gurnet, hake, mackerel, herrings, whiting, dorees, &c. Turbot is in best condition in June and July; plaice in October and November; soles in February and March; cod and ling, November to February; pollock, November to March; gurnet, May, June, and July; mackerel, June to November; herrings, August to December. There has been a large increase of mackerel and herrings during past five years. Fishermen would not be able to obtain security for loans, and it is very doubtful if they would be benefited. The means of transit are very good. No complaints exist of the high charges of transit. There are numerous natural and artificial harbours in the division; of the latter Galway, Barna, and Spiddal are the best, and would shelter the largest fishing boats. Ballyvaughan, New Quay, Kinvarra, Costelloe Bay, Greatman's Bay, also afford good shelter for fishing boats. Consider the only means of obtaining accurate statistics as to quantities of fish captured, and the disposal of it, would be for it all to pass through the Custom-house, where an account might be kept. The only way to more fully develop the fisheries would be to form companies with good boats and proper nets; at present there are not nets enough for the capture of the enormous quantities of fish that frequent Galway Bay. Immense shoals of herrings, mackerel, pilchards, and sprats, have appeared during last two seasons in Galway Bay. Consider the means of capture not at all adequate for the fish frequenting the coast. There might be employment for hundreds more boats than at present exist.	13

No. 1—continued.

of IRELAND from 1st January, 1871, to 1st January, 1872.

Total employed in 1871.			Substance of Observations made by Inspecting Commanders of Coast Guards and other Registering Officers, up to the 1st January, 1872.	No.
Vessels.	Men.	Boys.		
1,110	3,973	38	<p>Unguarded portion of coast in this division extends from Old Head, Clew Bay, to entrance of Killeries; but can be visited in summer from Tully and Westport. All boats registered. No improvement in boats, gear, &c. Most fishermen hold from two to fourteen acres of land each. No sign of improvement in the fisheries. Prospects bad. A spirit of emigration still prevailing. Considers the question whether fishermen if fully employed would remain at home doubtful. Last year less productive in take of fish than preceding. Oyster fisheries improving, except in Clew Bay, where they are much the same. There are no natural banks off the coast, but there are some in Clew, Ballynakill, and Birtcher Bays, with a few others of small importance. Slight decrease in supply. No spitting last year. No new natural banks lately discovered. Steps have been taken to stock ground where licences have been granted for the establishment of private beds. General quality of oysters middling. Price about 18s. per half-bushel. Quantity sold from Clew Bay about 6,000; cannot form any opinion as to quantity sold at other places. Curing establishments were formed at Boffin Island and Roundstone, but proved a total failure. No ice house exists. No conflicts occurred between parties pursuing different modes of fishing. Fishermen orderly, but not really industrious; they are generally employed in fishing. Considers registry of vessels fairly perfect; suggests that a supply of small tin cases to hold a boat's register, and to be sold at the cheapest possible rate would be of great use, as the boatmen would then have no reasonable excuse for not always carrying their registers in their boats. Considers tin cases of the description formerly used in the Royal Navy for the men's certificates would be the most convenient, and might be got for about one penny each wholesale. Trawling not practised. General tonnage of boats employed in seine, trammel net, and line fishing, from half a ton to ten tons. Fish captured sold in local markets. Horse and green mackerel in best condition from June to September; cod, ling, turbot, plaice, herrings, and pilchards, in best condition in autumn and winter. States that a good many lobsters are caught on some portions of the coast in this division. No change in quantity of fish frequenting the coast for the last five years. Considers fishermen would be benefited by loans, and that in some cases their landlords would stand as security for them; but in case of money being advanced considers the boats should be put under proper supervision, and that the Coast-guard, or some one duly authorized, should see that the money was expended, and the boats kept in working order. Means of transit of fish at Westport fair, but at other places bad. Charges for transit certainly very high, and as an illustration, states that the carriage of a turbot to London, weighing twenty-one lbs., cost him 14s. 7d. Considers the want of better and finer sea boats the great cause of such a poor catch of fish. Is told that a good-sized boat going out to the entrance of Clew Bay, or inside Achill Head, could get abundance of cod, that there are numbers of men willing to go and fish, but that they are afraid to venture out in their own boats, and that consequently no cod is taken until late in the season. States that at Roundstone, Birtcher, Cahol, Clifden, Claggan, Ballynakill, and Clew Bays, shelter is afforded for good-sized vessels, besides which there are numerous good creeks for boats, and numbers of excellent quays. Has no opinion to offer as to the best means for obtaining accurate statistical information of the quantities of fish taken, and how disposed of. Suggests that each divisional officer of Coast-guard be granted a salmon fishery licence <i>free</i>. Considers it would greatly tend to put them in contact with those who could give information on the subject of the fisheries; and states that, as a rule, owners of rivers would willingly give them permission to fish with rods. States herrings appeared off coast of this division in fair numbers during last and preceding years; but that the boats dare not go out after them, but only fished in the creeks and bays. Adequate means do not exist for capture, there being a decided want of better sea boats that could face a moderate breeze.</p>	14
251	993	44	<p>All portions of coast in this division guarded. All boats registered. General condition of the fisheries as regards boats, gear, &c., about the same as last three years. Fishermen on an average hold about two acres of land each. Slight improvement within the last year. Some of the fishermen having obtained a loan of money from a Society in Dublin, purchased nets and lines, and prepared their boats for fishing. Present prospects seem looking better than formerly. A spirit of emigration prevailing amongst fishermen, and the coast population generally. Considers if they were fully employed, on their own terms, they would be likely to remain at home. Last year more productive in the take of fish than preceding. Oyster fisheries getting worse; supply appears to be falling off. Unable to give any information on the subject of last year's spitting. No new natural banks lately discovered. No steps taken to stock ground where licences have been granted for the establishment of private beds. Quality of oysters indifferent—price from 2s. to 2s. 6d. per hundred. Cannot give any reliable information as to quantity sold within the year. No curing establishments or ice houses exist. All fish sold in the fresh state, except what is cured by the fishermen for their own use. No conflicts between fishermen. Fishermen orderly and industriously disposed, but very seldom employed in fishing. Registry of boats perfect. Knows of no better system of registration. Trawling not practised. No boats employed in seine or trammel net fishing. About 965 occasionally employed in fine weather in line fishing. Boats and curraghs from a half a ton to one and a half tons. All fish captured sold in the neighbourhood, or made use of by the fishermen. Bream, gurnet, pollock, cod, ling, and mackerel captured by line; herrings, mackerel, and salmon by net. Salmon, mackerel, bream, gurnet, pollock, and herrings in best condition during summer months; cod and ling during winter. Quantity of fish frequenting coast about the same during the past five years. Considers it would be questionable whether the fishermen would be benefited by loans—thinks they could not get security for repayment. Means of transit very bad, but considers if it were improved it would not lead to increased employment of men and boats. No complaints of high charges of transit. States there is any amount of accommodation for fishing craft up to thirty tons inside Achill Sound, where they can lay aground on the mud at low water in perfect safety. Considers information as to the quantities of fish taken could be had from the fishermen when they return from fishing. Has no suggestions to offer as to the improvement of the sea fisheries. States he has been informed by fishermen that large shoals of mackerel appeared off the coast of this division during the past year. Considers adequate means for capture exists.</p>	15
410	1,514	12	<p>The unguarded portion of division extends from "French Port to Erris Head." All boats registered. Very little change in the general condition of the fisheries compared with the last three years. Most of the fishermen hold small quantities of land, perhaps from one to two or three acres, chiefly for growing potatoes. No sign of improvement within the last year. A spirit of emigration still prevails. Thinks fishermen would not, if fully employed, remain at home, there being a general idea that once in America a certain fortune must result. There has not been much difference in last year's take of fish and the preceding. The oyster fisheries are slowly declining—no natural banks exist. The spitting of last season was slightly worse than preceding year. No steps have been taken to stock ground where licences have been granted for the establishment of private beds. The quality of oysters very good—price about £1 15s. per barrel. Cannot form any idea of quantity sold within the year. Curing establishments were formed at "Tip" (Blind Harbour), and "Blackod" many years ago, but with little result. The fish are chiefly sold in the fresh state. One ice house exists, belonging to a Mrs. Little, on the Owenmore River. No conflicts have occurred between persons pursuing different modes of fishing. Fishermen very orderly and hard working, but not generally employed in fishing. Registry of vessels perfect. Trawling not practised. About 400 boats employed in seine, trammel net, and line fishing. Fish captured chiefly sold in local markets, some sent to Castlebar and Ballina. Fish captured by trammel net are herrings and mackerel; both in prime condition from August to October; by line—cod, haddock, ling, and turbot. Haddock in best condition from August to February; cod, from November to April; ling from November to March; turbot from December to April. Cod and herring slightly on the decrease. Pollock, mackerel, and turbot much the same during last five years. Thinks fishermen would be benefited by loans for repair and purchase of boats and gear, but doubts if they, as a rule, could procure security for repayment of same. Means of transit of fish to market for sale very poor. No railway accommodation nearer than Castlebar and Foxford, forty miles distant. If improved would most probably lead to increased employment of men and boats. No complaints of high charges for transit. No artificial harbours in this division—the natural harbours accommodate boats of about two tons burden. States it is impossible to say by what means the most accurate statistical information could be had periodically, as to the quantities of the different kinds of fish taken, and the disposal of it, there being no regular fish market, and the greater portion being disposed of privately. Has no suggestions or observations to favour Inspectors with, as to the improvement of the sea fisheries, or the better preservation of good order amongst those employed in fishery pursuits. No large shoals of fish, such as herrings, mackerel, pilchards, &c., have appeared off the coast. Adequate means exist for the capture of such fish as appears off the coast.</p>	16
202	1,236	11	<p>All portions of coast in this division guarded. All boats registered. The fisheries seem to be in about the same condition for the last three years. The fishermen generally hold small plots of land from a half to five acres. There has been no improvement within the last year, but the prospects for the coming season appear good. A spirit of emigration still prevails, but the fishermen would remain at home if employment could be found for them. The take of fish has been about the same as previous year. There are two oyster beds, one in the River Moy, the property of Sir Arthur Gore, bart., but he does not sell the oysters; and one off Killeummin, the property of W. Little, esq. No new natural banks have been lately discovered. Mr. Little has stocked the ground at Killeummin, but none as yet have been taken. No curing establishments exist, the fish being all sold in the fresh state. No ice houses exist. No conflicts have occurred between persons pursuing different modes of fishing. The fishermen seem to be orderly and industriously disposed, but are only partially engaged in fishing. Registry of vessels perfect. Cannot favour Inspectors with any suggestions for a more improved system of registration. Only one trawler on this part of the coast, it being about thirty tons, belonging to Colonel Gore; but he does not sell the fish, and only trawls occasionally for his own amusement. General tonnage of boats from half to two tons. No seine or trammel nets used. One-third to one-half of the boats out at one time. Fish captured sold in the local markets. The kinds of fish generally captured by trawl, seine, trammel net, and line, are sole, bream, red and gray gurnet, fluke, codling, herring, and mackerel in season. All fish principally in best condition in the summer months. Thinks if anything there has been a slight decrease in all kinds of fish. Considers fishermen would be benefited by loans, but thinks they would have some difficulty in finding good security. Fish generally taken to the markets in carts by road, there being no railway in division. Killala Port is the only natural harbour for fishing boats; it could accommodate boats up to thirty or thirty-five tons. There is no other place in division where suitable accommodation could be built. Considers it would be very difficult to get any accurate information as to the quantities of the different kinds of fish taken, as the fishermen only go out when unable to get work on shore. Has no suggestions or observations to offer with reference to the improvement of the sea fisheries, or the better preservation of good order amongst those engaged in fishery pursuits. Some small shoals of herrings and mackerel appeared off the coast, about September. The herrings were small and the takes not large. There have been no pilchards. States fish never appears in any quantity off this part of the coast, but for what is caught there appears to be adequate means, as far as the condition of the fishermen at present allows.</p>	17
57	295	—	<p>All portions of the coast in this division guarded, and all fishing boats registered. The condition of the fisheries appears about the same as compared with the last three years. The fishermen all hold land from three to thirty acres, or on an average from four to six acres each. No sign of improvement during the last year, and present prospects the same. No spirit of emigration prevailing. Last year more productive than the preceding in the take of salmon and herrings about Aughris. On other parts of the coast about the same as preceding year. A heavy sea and bad weather set in when herrings were on the coast, and the fishermen were obliged to desist from fishing. General state of oyster fisheries very good. Two banks exist at Cullensmore, Ballisodare Bay. Supply improving. Spitting of last season about the same as previous. No</p>	18

STATE of the REGISTRY of FISHERY VESSELS on the COAST

No.	NAME OF DIVISION.	BOUNDARIES.	Registering Officer.	1st Class employed in 1871.			2nd Class employed in 1871.			3rd Class employed in 1871.		
				Vessels.	Men.	Boys.	Vessels.	Men.	Boys.	Vessels.	Men.	Boys.
19	Sligo,	Strandhill Barracks, county Sligo, to Donegal Abbey, county Donegal.	Geo. T Morrell, Lieut., R.N.,	1	5	-	70	390	48	161	983	2
20	Killybegs,	Donegal-quay to Lower Ferry, East, county Donegal.	Francis Osburn, Lieut., R.N.,	2	4	-	290	1,538	187	-	-	-
21	Dunfanaghy,	Gweebarra Bar to Whale Head, Lough Swilly, county Donegal.	E. C. Ball, Divisional Officer,	-	-	-	231	947	276	242	545	-
22	Carn,	Inch Embankment, Buncrana, county Donegal, to Magilligan Point, south side of Lough Foyle, county Londonderry.	Arthur Salwey, Commander, R.N.	5	16	-	255	1,170	21	114	576	6

INSPECTORS OF IRISH FISHERIES.

27

No. 1—continued.

of IRELAND from 1st January, 1871, to 1st January, 1872.

Total employed in 1871.			Substance of Observations made by Inspecting Commanders of Coast Guards and other Registering Officers, up to the 1st January, 1872.	No.
Vessels.	Men.	Boys.		
			new banks have lately been discovered. Steps have been taken to stock ground where licences have been granted for the establishment of private beds. Quality of oysters good—price from 7s. to 8s. per hundred. Can form no idea of quantity sold within the year. No curing establishments exist. All fish sold in the fresh state, except herrings, which the fishermen cure for their own private use. Two ice houses exist, one at Soullamore, and one at Ballina Quay. No conflicts have occurred between persons pursuing different modes of fishing. Fishermen very orderly and industrious, and when not fishing working on their land, &c. Registry of vessels perfect. Trawling practised by one yacht of about thirty tons, in summer time, in three to six fathoms of water. The general tonnage of boats employed in seine, trammel net, and line fishing is from half to two and a half tons. All fish sold locally, except salmon, which is sent to other places. Flat fish, such as sole, plaice, turbot, and ray, captured by the trawl and other nets; cod, black glasson, and a few mackerel, with seines. All in best condition in summer and autumn. On some parts of the coast in this division there has been a decrease in the number of herrings, while on other parts an increase. Does not think fishermen would ultimately be benefited by loans, or the fishery advanced by same. Considers fishing ought to be self-supporting. No means exist for transit of fish to market for sale. Does not think an improvement in same would lead to increased employment of men and boats. The only harbours in division are River Moy and Ballysadore Bay. Considers only means to get accurate statistical information as to quantities of different kinds of fish captured and how disposed of, would be by appointing a person for the purpose. Has no suggestions or observations to offer with reference to the improvement of the sea fisheries. States that no large shoals of fish have been seen off the coast of this division during last two years. Considers adequate means exist for the capture of such fish as appear in quantity off the coast.	
232	1,327	50	About fifty-four and a half miles of coast in this division unguarded, viz., from Rosess Point, Lower, to Drumcliffe Bridge—inaccessible from distance and danger—four miles in length: Rachley Station to Culmore (visited sometimes in daytime), and Culmore to Streedagh, three miles; Streedagh to Roskeeragh Point, seven and a half miles; Gammon Bridge to Bunduff Bridge, and Bunduff Bridge to Bundoran, ten miles; Bundoran Bridge to Portomera, and from Ballyshannon to St. John's Abbey, Donegal, thirty miles. All boats registered. No improvement in the condition of the fisheries. Fishermen hold from two to six acres of land each. A spirit of emigration still prevails, but considers if fishermen were fully employed they would remain at home. Last year's take in fish about the same as preceding. General state of oyster fisheries fair. One natural bank in channel of Sligo River. Supply improving. Spatting last season better than previous. Is not aware of any steps having been taken to discover new oyster banks. No steps taken or required to stock ground where licences have been granted for the establishment of private beds. Price of oysters, 5s. to 6s. per hundred. Quantity sold about 150,000. All fish sold in the fresh state. No curing establishment exists. One ice house at Sligo, and two at Ballyshannon. No conflicts have occurred between fishermen. Fishermen orderly and industriously disposed; when not fishing they are engaged tilling their ground, and employed in pilot boats. Considering the changes in the officers in charge of the stations, the registration of vessels is as perfect as can be obtained at present. Trawling is practised between Rachley and Rosess Point, by five boats of from eight to fifteen tons; and at Mullaghmore, by three boats of five tons—trawl worked in from two and a half to ten fathoms of water. Number of trawlers same as preceding year. From fifteen to twenty boats of from one to three tons generally employed in seine, trammel net, and line fishing. Fish captured sold locally as a rule, except salmon, which are sent to distant places. Fish generally captured are, by trawl—turbot, sole, dory, and plaice, in best condition from April to November; by seine—salmon, in best condition from February to July; herrings in best condition from November to January. Pollock, cod, and ling by line. There has been a slight increase in herring fishing; but owing to the want of large well-found boats, is unable to give any account as to the cod fishing off the banks. Considers fishermen would be benefited by loans; that in exceptional cases they might get security, but generally speaking thinks they would find a difficulty in doing so. Means of transit of fish to market for sale good. Considers if Rachley Pier and Harbour were improved it would lead to increased employment for men and boats. No complaints of high charges for transit. States Rachley is an artificial harbour, which if repaired and improved would accommodate crafts from thirty tons and upwards; and further that if Rachley Pier was extended it would allow of small craft, from ten to fifteen tons, to discharge their cargoes at low water. Considers present harbours if improved would give suitable accommodation. Considers that the most accurate statistical information could be had periodically, as to the quantities of the different kinds of fish taken, and how disposed of, by appointing men at different parts of the coast for that particular duty. With reference to the improvement of the sea fisheries, suggests that Rachley Pier be extended, the dock repaired, and large boats provided for fishing off the banks. No large shoals of fish appeared off the coast. Herrings were more plentiful than preceding year, some small shoals of which appeared off Rachley. States adequate means does not exist for the capture of such fish as appear in quantity off the coast. As regards the cod fishing off the banks, ten to fifteen miles from Rachley, large boats and point to run to for security are required.	19
292	1,542	187	No portion of coast in this division unguarded. All boats registered. No improvement in the general condition of the fisheries; rather worse if anything; gear out of order and on the decline. A few fishermen hold from one to seventeen acres each, but the majority none. Is of opinion there are no prospects of fishermen doing better; boats, &c., being in bad order. Large numbers of fishermen are emigrating, more especially the younger, who would gladly remain at home if fully employed. Take of fish during last year less productive than preceding. Fishing on coast of division generally on the decline. No oyster fisheries exist. One curing establishment exists at Teelin, but has been closed for some time, owing to the scarcity of fish. All fish sold in the fresh state. Two ice houses exist, one at Teelin, and one at Oneigh Bridge, near Arlora. No conflicts of any kind have occurred between persons pursuing different modes of fishing. States a more orderly, peaceable, or industrious set of men he never met; and are employed fishing nearly the whole year when weather permits—harvest time excepted. Registry of vessels perfect. No trawling, as a rule, practised. Small boats in Donegal Bay sometimes use a very small trawl, but catch little or nothing. The boats are about five tons each, worked in from five to ten fathoms of water. Number of trawlers, two, of about five tons each. No seine fishing carried on. Boats of from three to four tons employed in trammel net and line fishing. Fish captured sold on the beach to men who go for that purpose. Fish captured by trawl are plaice, sole, turbot, &c.; by seine—plaice, herrings, and mackerel; by trammel net—salmon, mackerel, horse mackerel, herrings, and sprit; by line—cod, ling, gurnet, hake, whiting, and salmon. Mackerel and horse mackerel in best condition from August to October; herrings during the winter; codling from December to February; gurnet, whiting, and bream at all times. States there has been a decrease in herrings everywhere. A decrease in cod, ling, and mackerel at Teelin; a decrease in salmon at Killybegs, Teelin, and Tribane. A general decrease in all kinds of fish. Never saw so few salmon captured. Was personally watching the fishing. Considers fishermen would be greatly benefited by loans for repair and purchase of boats and gear, and that same would cause an increase in the capture of fish. Fishermen generally very poor. Considers no security could be procured. No railway accommodation nearer than Ballyshannon. Means of transit of fish to markets for sale bad. Has not heard of any complaints of high charges for transit. States Killybegs and Teelin are both good harbours, and could accommodate any number of fishing craft; no outlay necessary. Considers fishing creeks so far apart that no accurate statistical information could be had as to the quantities of the different kinds of fish captured, unless a person was appointed for the special purpose. Suggests that poor fishermen should be allowed to make use of the Government boat houses for the better protection of their boats during the long-continuing gales the part of the coast in his command is subject to. Considers a great reason for the fishermen not having their boats and gear in better order is the want of protection for them from the weather. States that in most Government boat houses the nets might be safely stored at least, should there not be room for boats; that if this could not be carried out a few inexpensive sheds would pay very well. No large shoals of fish have appeared off the coast during last or preceding year. States that fishing varies so much that it would be difficult to say whether or not adequate means exist for capture. Has seen more fish than men to catch them; but as a rule it is the opposite—that there is such a continuation, at times, of bad weather, that fishermen could hardly exist without other employment.	20
473	1,492	276	No portion of coast unguarded in this division. Very little alteration in the condition of the fisheries. The greater portion of fishermen have small holdings. No sign of improvement in the fisheries within the last year. Present prospects fair. A spirit of emigration still prevails. Considers last year a little less productive in the take of fish than preceding. No oyster fisheries exist in district. No curing establishments; fish captured sold in the fresh state. Ice houses exist at Ramelton, Doe Castle, and Gweedore, for salmon. No conflicts occurred between parties pursuing different modes of fishing. Fishermen most orderly. Registry of vessels perfect. Trawling not practised. General tonnage of boats employed in seine, trammel net, and line fishing, from one to two and a half tons. Fish captured at Rathmullen and Lough Swilly sent for sale to Londonderry; that taken at other places sold in local markets. Kinds of fish generally captured are cod, ling, haddock, gurnet, plaice, flounders, and sometimes turbot (at Horn Head); taken in best condition in February, March, July, and August. States there has been a decrease in all kinds of fish. Considers fishermen would be benefited by loans; is doubtful as to whether they would be able to obtain security. Means of transit of fish taken at Rathmullen and Lough Swilly by rail to Londonderry. No complaints of high charges for transit. Harbours in division are—Rutland, Gweedore River, Dunfanaghy, and Ards, which could each accommodate from twenty to thirty large boats of about twenty tons each. Considers most accurate statistical information as to the quantities of the different kinds of fish taken can be had by appointing a person for that purpose. Has no suggestions to offer as to the improvement of the sea fisheries. No pilchards off the coast within this division, and very few mackerel or herrings. States fishermen require larger boats; that Skerry vessels do very well off Horn Head and that part of the coast, in cod and ling fishing.	21
374	1,762	27	The only portions of this division unguarded are those which are inaccessible, and where there is no boat traffic, and no boats kept, such as "Longfield Bank" and parts of the coast near "Malin Head." All boats registered, and included in return. Condition of fisheries much the same during the last three years. Many of the boats falling into decay. Gear, &c., much the worse of wear and tear. No improvement noticeable during last year, and fishermen do not think their present prospects promising. A spirit of emigration still prevailing. Fishermen do not think they are sufficiently remunerated for their labour, and not fully employed, which makes them imagine they would do better in America. Many of the young men have gone, and others are only prevented by want of means to take them there. States if they were fully employed, with prospects looking brighter, they would remain at home, and that they are not ignorant of the vicissitudes or trials they would have to contend with in America. Taking the several modes of capture into consideration, states it is the general opinion that the produce from fishing has been much the same last year as preceding. States the greatest number of natural oyster banks of division abound in Lough Foyle, which may be said, without exaggeration, to spread over the whole of the Lough; some of which are from three to four miles in length, and from one to one-half and one-quarter mile in breadth; some of which are as follows, viz.:—Mr. Kennedy's bank, a half mile N.E. and S.W.; Clear and Clatty bank, N. and S. four miles long; Roof bed, N.E. and S.W. two miles long, and a quarter mile wide; Quigley's Point bed, a half mile long and a quarter mile wide; Whitecastle bank, two miles long N.E. and S.W., a quarter mile wide, &c. General quality of oysters very good. Supply and spatting much the same as preceding year. No new natural banks have been discovered. States that steps have been taken to stock licensed beds belonging to Captain Hart and others at Lough Swilly, by having oysters brought from the Foyle, Blackod Bay, and Achill Sound, to propagate on their private beds at Buncrana, Kilderry, &c., &c. General quality very good, and of excellent flavour. Price varies	22

STATE of the REGISTRY of FISHING VESSELS on the COAST

No.	NAME OF DIVISION.	BOUNDARIES.	Registering Officer.	1st Class employed in 1871.			2nd Class employed in 1871.			3rd Class employed in 1871.		
				Vessels.	Men.	Boys.	Vessels.	Men.	Boys.	Vessels.	Men.	Boys.
23	Ballycastle (Antrim).	Bann Mouth, county Londonderry, to Red Bay, county Antrim.	Stratford Tuke, Commander, R.N.	-	-	-	145	485	4	15	49	1
24	Carrickfergus.	Jenning's Bridge, near Carron Point, to White Railings, near Belfast, county Antrim.	William G. England, Commander, R.N.	-	-	-	52	141	-	101	246	-
25	Donaghadee.	Tillysburn, near Belfast Lough (S.), county Antrim, to Newcastle Quay, near Cloghy Bay, county Down.	Geo. Rivington, Commander, R.N.	17	118	1	199	688	23	33	80	-
26	Strangford.	Newcastle Quay, North, near Cloghy Bay, to Sheepland Head, South, county Down.	James Pyper, Staff Commander, R.N.	-	-	-	147	828	5	9	13	-

No. 1—continued.

of IRELAND from 1st January, 1871, to 1st January, 1872.

Total employed in 1871.			Substance of Observations made by Inspecting Commanders of Coast Guards and other Registering Officers, up to the 1st January, 1872.	No.
Vessels.	Men.	Boys.		
			<p>from 2s. to 7s. per hundred. States the average quantity of oysters sold within the last year was as follows, viz.:—From 190,000 to 193,000 shipped to Liverpool and Glasgow markets, and from 6,400 to 6,600 sold in local markets. A curing establishment was built at Cudaff in 1867, at which period curing was brought to great perfection in that establishment, which was provided with everything necessary to facilitate the work, and bring the curing to perfection. The fish now taken is for the most part sold in the fresh state. Owing to the facilities afforded by steamer and rail the fish arrives at the English and Scotch markets in excellent condition, and quite fresh. No curing establishments now exist in this division. Ice houses exist at Londonderry, on bank of Rosse's Bay, and at Culmore—all belonging to the Salmon Fishery Company. No conflicts have occurred between parties pursuing different modes of fishing. States the fishermen are orderly, peaceable, and industriously disposed, and are generally employed in fishing, except during the time for potato tilling, when they (such as possess ground or means to procure it) till small portions to supply their families with that edible. Registry of vessels perfect; cannot suggest a better system of registration. Trawling practised by vessels of from three to sixteen tons each; they work in from three to seven fathoms of water in Lough Foyle, and in from three to ten fathoms in Lough Swilly. Five trawlers belong to this division, and thirteen frequent it from Rathmullen and Buncrana. Trawlers less by one this than preceding year. General tonnage of boats employed in seine and line fishing from one and a half to two tons, and 307 in number. No trammel nets. The greatest part of fish captured shipped to English and Scotch markets. Some sold locally. The kinds of fish generally captured by trawl are—sole, plaice (of very fine description), and turbot (sometimes), cod, ling, ray, and fluke; by seine—herrings, large sprat, doree, skate, and occasionally gurnet, cod, and ling; in best condition from November to end of March, in worst from March to May. Flat fish, such as sole, plaice, turbot, and ray, in best condition from July to November, in worst from November to May. States that the produce from fishing, according to information received from the fishermen, has been on an average for the last five years. Trawlers captured more fish during the last year, owing to Lough Swilly being opened to them. Haddock appears to have forsaken Lough Swilly, as scarcely any are taken latterly on that part of the coast. Considers that some of the fishermen might be benefited by loans, and could get security for repayment of same, but that they think loans would be of small benefit to them on account of the uncertainty of success in their calling, and they fear not being able to meet the instalments regularly at the time of their becoming due. States means of transit of fish to markets for sale is very good. No complaints of high charges for transit. States Lough Foyle and Lough Swilly can accommodate fishing vessels of the largest tonnage, and that the large vessels of the fishing craft frequent those places as harbours of safety; the creeks and bays, such as Shruve, Port Kenneog, Greenacres, Portmore, Portoranin, Lagahurry (inside Trabaga Bay), Dunaff, Lencan Bay, and many minor boat ports, are frequented by the smaller craft, say from one and a half to two tons, to which shelter and security is afforded. Considers the most accurate statistical information could be had periodically as to the quantities of the different kinds of fish taken, by appointing properly-qualified persons for that purpose. Considers that duty would require a certain amount of care and attention with regard to the shipment of the different kinds of fish, dates, quantities, &c., &c. The only suggestion has to offer is with regard to the wished for removal of the restrictions with reference to trawling in Lough Foyle, which has become for some time past a matter of complaint with the trawlers. States they feel sore on that point, and that they maintain they have a right from time immemorial to trawl in the lough, which, they say, is very extensive, affording room for all, by which they mean room for the Salmon Fishery Company, with whom, they say, they did not interfere. States they attribute the restrictions placed on them to the representations of the Salmon Fishery Company and the Honorable the Irish Society, who claim jurisdiction over the whole lough from M'Gilligan Point to Londonderry, and believes higher up the river. States no large shoals of fish of the herring, mackerel, or pilchard kind, have appeared off the part of the coast in this division during the last or preceding year. States adequate means do not exist for the capture of large shoals of fish of the mackerel, herring, or pilchard kind, which require such nets and gear as are used by the Penzance and Cornish fishermen; the only means of capture are the usual herring nets, such as are used in the county Galway by the Claddagh, Roundstone, Clifden, and Westport fishermen, which are of large size, but by no means equal to the nets used on the Cornish coast.</p>	
260	543	6	<p>All portions of coast guarded. All boats registered. Slight improvement in boats and gear. Most of the fishermen hold from one to twenty acres of land each. No improvement in the fisheries within the last year; prospects bad. No emigration prevailing. Last year less productive in take of fish than preceding. No oyster fisheries in district. No curing establishments exist; fish always sold in the fresh state. Ice houses exist at all the salmon stations. No conflicts between parties pursuing different modes of fishing. No fishermen in this division depend solely on fishing for a livelihood. Registry of vessels perfect. No suggestions to offer as to an improved system of registration. Trawling not practised. General tonnage of boats one and a half to two tons. Twenty boats employed in seine fishing, remainder in line fishing. No trammel nets. Fish captured sold in local markets. The kinds of fish generally captured by seine are—herrings, glasson, bream, and scad, in best condition in summer; by line—cod, ling, gurnet, and pollock, generally in season and good condition. There has been a fair average during the last five years in the fish frequenting the coast in this division. Considers fishermen would not be benefited by loans, they not being regular fishermen. Means of transit of fish to market for sale good. No complaints of high charges for transit. States Portrush and Bannmouth are the only places where boats can remain with safety. Considers the most accurate statistical information can be had periodically as to the quantities of the different kinds of fish taken, and the disposal of it, by the Coast-guard officers. Has no suggestions or observations to offer as to the improvement of the sea fisheries. States that in Ballycastle Bay, during the summer, large shoals of herring were seen. Considers adequate means exist for the capture of such fish as appear in quantity off the coast of this division.</p>	23
153	387	—	<p>The unguarded portion of coast in this division extends from Larne Lighthouse to Mill Bay (Island Magee). All boats registered. General condition of fisheries same as last three years. No improvement. Fishermen hold little or no land. A few new boats have been built at Glenarm. Slight improvement at Glenarm within the last year, and prospects brighter there. Considers fishermen would remain at home if fully employed; some would emigrate if they had the means. Last year slightly more productive on the whole in the take of fish than preceding. State of oyster fisheries very fair in Belfast Lough. Several natural banks exist there, also off Holywood, Green Island, and the coast. No improvement in supply; spitting same as usual. No new natural banks have been discovered. No steps have been taken to stock the ground where licences have been granted for the establishment of private beds. Quality of oyster good. Price from 6s. to 10s. per hundred. Quantity sold within the year from 10,000 to 15,000. No curing establishments exist; all fish sold in the fresh state. One ice house exists for salmon, belonging to the Earl of Antrim. No conflicts have occurred between parties pursuing different modes of fishing. Fishermen orderly and industriously disposed. Registry of vessels perfect. Suggests that no vessels should appear on registry but those employed solely for purpose of sale. Trawling practised by eleven boats, of from four to eight tons each, in from two and a half to five fathoms of water. General tonnage of boats employed in seine, trammel net, and line fishing, about four tons each. Number of boats thus employed twenty. Fish captured sold locally at Glenarm and Larne, but sent to Belfast from Carrickfergus. Kinds of fish generally captured are:—by trawl—plaice; by seine—cod, ling, and pollock; by trammel—cod, ling, pollock, and mullet; by line—cod and ling. Cod and ling in best condition in winter; plaice, herrings, cod, ling, and pollock, in best condition in summer and autumn. Slight increase in mackerel and herrings last summer. States fishermen would be benefited by loans; that some could get security, but that the greater portion could not. That fishery trade of this division hardly pays its own expenses. Means of transit good. No complaints of high charges for transit. The harbours of division are—Carnlough and Glenarm, partly natural and partly artificial, can accommodate vessels up to 100 tons; Larne Lough, vessels of all sizes; Whitehead, an artificial harbour, can accommodate forty boats of twenty tons; Castlefergus town harbour can hold fifty boats of thirty tons; Scotch Quay shelters boats of smaller class up to eight tons. Considers the most accurate statistical information could be had as to the quantities of the different kinds of fish captured, and how disposed of, by appointing persons for that purpose. States fishermen complain of the scarcity of fish, but is unable to account for the decrease of same. States several large shoals of herrings, mackerel, and pollock appeared off the coast during last summer, passing south from Glenarm to the north. As only sufficient boats are employed for ordinary fishing purposes, does not think adequate means exist for the capture of any large increase of fish, should such make their appearance off the coast.</p>	24
249	886	24	<p>No portion of coast in this division unguarded. A slight improvement, compared with the last three years, in boats and gear. Most of the fishermen hold from one-half to nine acres of land each. An improvement has taken place within the last year in the southern portion of division; present prospects fair. No spirit of emigration prevailing. Fishermen would, if fully employed, remain at home. Last year more productive than preceding in the take of fish. General state of the oyster fisheries not good. One natural bank exists, extending from Groomsport to the Copeland Islands. Supply not improving. Spitting about the same as previous year. No new banks have been discovered. No steps have been taken to stock ground where licences have been granted for the establishment of private beds. Cannot form any idea of quantity of oysters sold within the year. No curing establishments or ice houses exist; fish sold in the fresh state. No conflicts have occurred between persons pursuing different modes of fishing. Fishermen orderly and industriously disposed, only partially engaged in fishing. Registry of vessels perfect; has no suggestions to offer as to a more improved system of registration. Trawling practised in Belfast Lough by ten boats of from two to ten tons, in from seven to fourteen fathoms of water. The general number of boats employed in the seine, trammel net, and line fishing, is about 200, of from one-half to four tons each. Portion of fish captured sold in local markets, and some sent to other places. The fish generally are—flat fish, salmon-trout, cod, ling, conger, and pollock. Flat fish in best condition August to November; pollock, August and September; salmon-trout, July; cod, ling, and conger, December to April. States there has been little or no change in the quantity of fish visiting the coast of the division within the last five years. Considers that not many fishermen would be benefited by loans, but that a few might. Means of transit good. Does not think an improvement would lead to increased employment of men and boats. No complaints of high charges for transit. The harbours in this division are—Bangor, which can accommodate boats of fifty tons; Groomsport, which can accommodate boats of fifteen tons; Donaghadee, which can accommodate boats of 100 tons; Ballywalter, which can accommodate boats of eighty tons; Johnport, which can accommodate boats of fifteen tons; and M'Cammon, which can accommodate boats of thirty tons; all of which are in good repair, except Groomsport. Considers the most accurate statistical information can be had as to the quantities of the different kinds of fish captured, and how disposed of, by appointing a person for that purpose. States there is no fishery worth naming in this division; that several shoals of mackerel and herrings appeared off the coast between Belfast Lough and Donaghadee during the past year. Considers adequate means exist for the capture of such fish as appear in quantity off the coast of this division.</p>	25
156	341	5	<p>States none of the coast in this division is entirely unguarded, but that there are several by-places, which are only occasionally visited. No boats registered. General condition of the fisheries much the same as compared with the last three years. A few fishermen hold from six to ten acres of land each, and some less. A little improvement has taken place within the last year. No spirit of emigration prevailing. Last year more productive in the take of fish than preceding. No oyster fisheries off the coast, but those up Strangford Lough, abreast of Kircubbin, about mid-water, in fair condition. Supply falling off—spitting worse than previous year. No new banks have been lately discovered. No</p>	26

APPENDIX TO THE REPORT OF THE

APPENDIX,

STATE of the REGISTRY of FISHING VESSELS on the COAST

No.	NAME OF DIVISION.	BOUNDARIES.	Registering Officer.	1st Class employed in 1871.			2nd Class employed in 1871.			3rd Class employed in 1871.		
				Vessels.	Men.	Boys.	Vessels.	Men.	Boys.	Vessels.	Men.	Boys.
27	Newcastle.	Gun's Island, Strangford, North, county Down, to River Foot, Kilkeel, South.	Henry M. Bingham, Commander, R.N.	24	152	9	98	370	26	20	40	1
28	Carlingford.	From River Foot, Kilkeel, North, county Down, to Ballaghan Point, near Greenore, South, county Louth.	W. F. A. Harris, Lieut., R.N.,	14	94	12	142	587	6	147	459	-
29	Dundalk.	Ballaghan Point, near Greenore, to Maiden Tower, Drogheda, county Louth.	G. B. Bell, Lieut., R.N.,	-	-	-	221	827	15	-	-	-
30	Malahide.	Mouth of Boyne, county Louth, to Whip of the Waters, Clontarf, county Dublin.	William Moriarty, Commander, R.N.	61	414	82	35	145	5	15	33	-

No. 1—continued.

of IRELAND from 1st January, 1871, to 1st January, 1872.

Total employed in 1871.			Substance of Observations made by Inspecting Commanders of Coast Guards and other Registering Officers, up to the 1st January, 1872.	No.
Vessels.	Men.	Boys.		
			<p>steps have been taken to stock the ground where licences have been granted for the establishment of private beds. The quality of oysters indifferent—price from 5s. to 7s. per hundred. Can form no idea of quantity sold within the year. No curing establishment or ice house exists. Fish always meet with ready sale in the fresh state. No conflicts have occurred between persons pursuing different modes of fishing. Fishermen orderly and industriously disposed. Registry of vessels perfect. Trawling not practised. States with reference to the number and tonnage of boats employed in the seine, trammel net, and line fishing, that there are only three deep sea net fishers from eleven to fifteen tons each, the others are from one to one and a half tons each. Hook and line fish sold in local markets; deep sea fish at other places. Kinds of fish generally captured are cod, ling, whiting, and pollock, by hook and line—in best condition in summer season. States there has been a little increase in all kinds of fish usually caught. Considers fishermen would not be benefited by loans. Means of transit good. No complaints of charges for transit, as fish are readily disposed of on the spot. No natural, partly natural, or artificial harbours exist in this division, except Strangford Lough, generally. Considers accurate statistical information as to the quantities of fish captured and how disposed of, can only be had by appointing a person for that purpose. States the fishing carried on is all by hook and line, and governed by tide. That the best state of order prevails amongst those engaged in fishing. States that in August last mackerel and herring appeared off the coast in large quantities—the mackerel from 3,000 to 7,000 in a shoal, and the herring in immense shoals. Considers that adequate means exist for capture.</p>	
142	562	39	<p>No portion of coast in this division unguarded. All boats registered. Condition of the fisheries appears to be generally the same, as compared with the last five years—except at Annalong, where there is an improvement in boats and gear. Most of the fishermen hold land from one to ten acres each. An improvement within the last year, and prospects good, at Ardglass, Killough, Dundrum, and Annalong. No improvement, and prospects not good, at Tyrrolia, Newcastle, and Leestown. No spirit of emigration prevailing. Considers that the take of fish last year has been about the same as preceding, except at Ardglass and Killough, where it has been more productive. States the only oyster beds in this division are from three to four miles off Annalong, which require working to remove the accumulations that have for years collected over them. No curing establishments or ice houses exist. No conflicts have occurred between persons pursuing different modes of capture. Fishermen orderly and industriously disposed. Registry of vessels perfect. Trawling not practised. Twenty-five boats of from fifteen to twenty tons each employed in seine fishing; and 126 boats from three-quarters to two tons each in line fishing. No trammel net fishing. Fish captured by long lines sold in local markets. Herrings sent to other markets. The fish generally captured by seine are herrings and mackerel; by line, cod, ling, and whiting—in best condition from October to March; also flat fish in best condition March to October. There has been an increase of herrings at Ardglass; about the same as preceding five years at other ports. Considers that at Annalong fishermen could find security for loans, but not at other ports. Means of transit good, except at Annalong, where, for want of telegraphic communication to Newcastle and the other northern fishing ports, the fishermen lose many a night's fishing in having to go to other ports to find purchasers. No complaints of high charges for transit. The harbours of this division are:—Ardglass, partly natural and partly artificial, can accommodate 800 fishing boats of twenty tons each—is in bad repair and filling up. Killough, partly natural and partly artificial, can accommodate sixty fishing boats of twenty tons each—is in fair repair. Newcastle could accommodate boats of any size at high water—at present almost useless; an outlay required for repairs. Annalong, partly natural and partly artificial; at present there is not accommodation for the number of fishing boats that frequent it in summer; an outlay is much required for the enlarging of it and the improvement of the entrance thereto. Considers accurate statistical information could be had as to the quantities of the different kinds of fish taken, and how disposed of, by arranging a system whereby the master of every fishing boat should report to the station officer of coast-guard, or other person in the locality, the quantity of fish caught and price obtained for the same every voyage, before leaving the port. Suggests that a sub-inspector be appointed, who should reside on the coast, to have charge within certain limits, to visit every fishing port within it, to collect the information as to quantities of fish captured, &c.; also to see that the fishing is carried on at the different places in his locality as required by Act of Parliament; to collect repayment of loans granted to fishermen; to settle any disputes either between fishermen or between them and the purchasers; to be an authority for them to apply to in all matters of dispute; to look after the fishing interests generally within the limits of his inspection; to communicate with the Inspectors of Irish Fisheries, and make statistical and other returns, &c., &c., &c. No large shoals of fish have appeared off the coast of this division. Considers adequate means exist for the capture of such fish as do appear.</p>	27
303	1,140	18	<p>No portion of coast in this division unguarded. All fishing boats registered. Condition of the fisheries as regards boats, &c., on the decline. Nearly all fishermen hold from three to four acres of land each. No improvement whatever has taken place. Emigration does not prevail as much as formerly. There is no spirit of emigration. Take of fish nearly the same as preceding year. No improvement in the oyster fisheries. No natural banks in this division. Has no means of ascertaining whether supply is improving or otherwise. Quality of oysters very good, but rather of a small size—price from 8s. to 10s. per hundred. Quantity sold within the year from 2,000 to 3,000. No curing establishments exist—fish all sold in the fresh state. No conflicts have occurred between parties pursuing different modes of fishing. Fishermen orderly, but not generally employed in fishing. Registry of vessels perfect. Trawling not practised. General tonnage of boats employed in line fishing from two to two and a half tons. All fish captured sold in the local markets. Neither trawl, seine, nor trammel nets used, but hand lines and herring nets are. Season when herrings are in best condition is the autumn; white or hand-line fish in winter. No increase in the capture of fish. States the fishermen would, undoubtedly, be benefited by loans for the repair of boats, &c., &c., and the fishing advanced by same; but security for repayment is only doubtful. Means of transit very indifferent at present. No complaints of high charges for transit. The only natural harbour in this division is Carlingford Lough, and the only artificial one, Kilkeel, now in course of construction. The former can accommodate thousands of all sized boats and vessels. Kilkeel Harbour, which is nearly completed, will be capable of accommodating from 200 to 300 fishing boats and vessels. Thinks accurate statistical information as to the quantities of fish captured, and how disposed of, could be had from the local buyers. Has no suggestions to offer as to the improvement of the sea fisheries. No large shoals of fish appeared off the coast of this division during the past year. States there are no adequate means of capture for large quantities of fish that may appear off the coast.</p>	28
221	827	15	<p>No portion of coast in this division unguarded. No improvement in boats. Some fishermen hold from half an acre to two acres of land each. Slight improvement in the fisheries within the last year—present prospects good. Considers if fishermen were fully employed they would remain at home. Last year more productive than preceding in the take of salmon, but no improvement in the capture of herrings. No oyster fisheries in this division. No curing establishments or ice houses exist. Fish sold in the fresh state. No conflicts between persons pursuing different modes of fishing. Fishermen orderly and industriously disposed, and generally employed in fishing. Registry of vessels perfect. Trawling not practised. Tonnage of boats employed in seine, trammel net, and line fishing from one to one and a half tons. Fish captured sold in the local markets. Mackerel in best condition in July and August. Herring in best condition in September. Cod, ling, and whiting in best condition in winter. States there was a slight decrease in herrings frequenting the coast of this division last year, and a slight increase in salmon. States there is no doubt the fishermen would be benefited by loans, and the fisheries advanced thereby, and that some fishermen could procure good security. Means of transit good. Fish mostly bought on the beach by regular buyers. No complaints of high charges for transit. Harbours in division are Drogheda and Dundalk—partly natural; also a small one at Clogher Head, constructed out of a quarry hole, which might be made a good harbour for fishing boats by a small outlay. Considers a harbour very much required at Giles Quay. Is of opinion that the most accurate statistical information could be had as to the quantities of fish captured, and how disposed of, by appointing persons for that purpose. Has no suggestions to offer as to the improvement of the sea fisheries. States that no very large shoals of fish appeared last year, weather being very much against their coming into Dundalk Bay. Considers adequate means for capture of such fish as appear in quantity off the coast exists.</p>	29
111	592	37	<p>All portions of coast in this division guarded. All boats registered. Condition of boats and gear fair. Some fishermen hold small plots of land. No sign of improvement in the fisheries within the last year. Does not know whether a spirit of emigration still prevails, or if fishermen would remain at home if fully employed. Take of fish last year about the same as preceding. No natural oyster banks in this division. One artificial one at Malahide. Is unaware whether spatting was better or worse last than that of previous year. Steps have been taken to stock private beds. Quality of oyster (at Malahide) good. Price 5s. per hundred. Can form no idea of quantity sold within the year. One curing establishment at Rush. No ice houses. No conflicts occurred between persons pursuing different modes of fishing. Fishermen orderly and industriously disposed. Registry of vessels perfect. Trawling practised at Balbriggan by six trawlers, of from twenty to twenty-four tons each, in from five to ten fathoms of water. The general tonnage and number of boats employed in seine, trammel net, and line fishing, are—at Balbriggan, ten boats of from one and a half to twenty tons; Skerries, thirty-nine boats, from one and a half to eighteen tons; Rush, twenty-one boats, from two to thirty tons; Malahide, two boats, about twelve tons each; and at Baldoyle by boats averaging from eighteen to twenty tons; five boats are also employed in net and line fishing at Portrane of about two tons each. Fish captured at Balbriggan, Skerries, and Rush, sent to other places for sale; that taken at Portrane sold in the neighbourhood; and that captured at Malahide sold at Howth. Fish captured by trawl at Balbriggan are—plaice, ray, &c.; by nets—herrings; and by line—cod, &c.; at Skerries, by nets—herrings; by line—cod and ling; at Rush; by nets—herrings; by line—cod, ling, ray, &c.; at Malahide, by nets—herrings; by line—cod, ling, and plaice; at Baldoyle, by nets—herrings; by line—cod. At Portrane only a few herrings are captured. Quantity of fish frequenting coast of this division during the last five years about the same. States fishermen at Balbriggan, Skerries, and Baldoyle would possibly be benefited by loans, but thinks it would be difficult for them to procure security; is unaware as regards fishermen at Rush, Portrane, and Malahide. Means of transit good. No complaints of high charges for transit. Harbours in division are as follows, viz.:—Balbriggan, artificial, in fair repair; can accommodate vessels of 150 tons; Skerries, artificial, in poor condition, can accommodate vessels of 200 tons; Rush, artificial, requires cleaning out, can accommodate vessels of forty tons; Malahide, tidal harbour, can accommodate vessels of 100 tons. States that complaints have been made that parties trawl within prescribed limits, particularly about the mouth of the Boyne. Has no means at his disposal for the arrest of such as offend. No large shoals of fish appeared off the coast of this division during last or preceding year. Considers fair means exist for the capture of such fish as appear in quantity.</p>	30

APPENDIX.
No. 2.

APPENDIX No. 2.—ABSTRACT OF RETURNS FROM COAST GUARD.

No.	Name of District.	Registering Officer.	Solely engaged in Fishing.						Nearly altogether employed in Fishing.						Only partially employed in Fishing.						Totals.												
			First Class.		Second Class.		Third Class.		First Class.		Second Class.		Third Class.		First Class.		Second Class.		Third Class.														
			Vessels.	Men.	Boys.	Vessels.	Men.	Boys.	Vessels.	Men.	Boys.	Vessels.	Men.	Boys.	Vessels.	Men.	Boys.	Vessels.	Men.	Boys.	Vessels.	Men.	Boys.										
1	Dublin.	Commander Henry Hand.	83	411	82	64	209	36	60	286	29	6	2	36	2	13	63	2	2	2	7	105	6	27	142	7	1	4	227	962	151		
2	Arklow.	Commander Vincent Williams.	-	-	-	210	1,213	4	22	92	6	-	-	-	-	56	280	10	-	-	-	-	-	-	-	-	-	1	339	1,836	24		
3	Wexford.	Commander Thomas Hooper.	22	126	-	178	781	22	-	-	-	-	-	-	-	43	169	-	-	-	-	-	-	-	-	-	-	5	249	1,089	22		
4	Waterford.	Commander William B. Stubbs.	8	24	-	8	79	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	196	602	29		
5	Youghal.	Commander John R. D. Cooper.	4	22	2	12	50	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	124	651	26		
6	Queenstown.	Commander H. St. J. de Robeck.	6	30	-	23	58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	189	705	38		
7	Kinsale.	Commander G. W. Carter.	40	280	40	18	62	-	12	48	-	-	7	7	1	42	206	1	22	94	-	-	6	7	41	3	225	1,149	88	315	1,273	109	
8	Skibbereen.	Commander E. H. Hartwell.	2	12	2	6	32	2	16	68	3	-	-	-	-	28	120	19	28	119	6	28	30	-	-	-	-	3	356	1,273	447		
9	Castletown Berehaven.	Lieutenant William Vicary.	-	-	-	50	200	10	192	646	90	-	-	-	-	3	12	2	74	296	25	-	-	-	-	-	-	-	356	1,273	681		
10	Killarney.	Mr. Patrick Mahony, D.O.	10	40	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	387	1,623	172		
11	Ballyheligue.	Mr. W. Daish.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	51	152	2		
12	Seafeld.	Lieutenant W. H. Wright.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	33	99	1		
13	Galway.	Lieutenant John C. Drew.	7	19	12	-	-	-	6	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	880	14		
14	Clifden.	Commander Claude E. Buckle.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	668	2,308	28		
15	Keel.	Mr. Robert George Gibbon, I.O.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	62	422	1,603	
16	Belmullet.	Lieutenant Duke Yonge.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	33	240	960	
17	Ballycastle, K.	Lieutenant H. S. Mandeville.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	15	199	1,221	
18	Pullenvilla.	Mr. R. Bone, D.O.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	15	199	1,221	
19	Sligo.	Lieutenant G. T. Morrell.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	237	26	337	
20	Killybegs.	Lieutenant F. Osbourne.	-	-	-	9	43	5	-	-	-	-	-	-	-	41	238	40	14	74	-	-	-	-	-	-	-	-	20	109	3	147	
21	Dunfargally.	Mr. E. C. Ball, D.O.	-	-	-	34	150	29	1	100	254	-	-	-	-	26	109	41	90	167	-	-	-	-	-	-	-	-	306	1,103	120	2	
22	Carn.	Commander A. Salway.	-	-	-	68	288	6	48	288	6	-	-	-	-	74	330	12	-	-	-	-	-	-	-	-	-	-	123	532	3	66	
23	Ballycastle, Antrim.	Commander S. Tuke.	-	-	-	-	-	-	-	-	-	-	-	-	-	21	90	4	1	2	-	-	-	-	-	-	-	-	124	393	1	18	
24	Carrikerbeg.	Commander W. G. England.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27	66	100	244	
25	Donaghadee.	Commander G. Rivington.	-	-	-	-	-	-	1	2	-	-	-	-	-	21	96	4	-	-	-	-	-	-	-	-	-	-	1	149	499	19	
26	Strangford.	Staff-Commander J. Pyper.	-	-	-	-	-	-	-	-	-	-	-	-	-	5	9	2	-	-	-	-	-	-	-	-	-	-	3	92	211	3	
27	Newcastle.	Commander H. M. Bingham.	14	89	-	48	108	-	13	27	1	-	-	-	-	43	188	-	-	-	-	-	-	-	-	-	-	-	10	63	9	42	
28	Carlingford.	Lieutenant W. F. A. Harris.	14	94	-	5	25	-	-	-	-	-	-	-	-	10	40	-	-	-	-	-	-	-	-	-	-	-	-	127	522	6	147
29	Dundalk.	Lieutenant G. B. Bell.	-	-	-	221	827	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
30	Malahide.	Commander William Moriarty.	21	143	18	12	63	8	-	-	-	-	-	-	-	34	227	10	15	57	1	7	16	-	-	-	-	-	6	44	4	8	
			231	1,290	186	1,118	4,733	177	470	1,029	135	448	2,104	176	373	1,841	67	54	286	13	2,615	10,291	599	8,627	14,754	457	8,999	8,680	1,338				

APPENDIX, No. 3.

APPENDIX,
Nos. 3 and 4.

HOWTH.

ABSTRACT of Returns of Herring Fishing, between the 5th June, 1871, and the 11th November, 1871, furnished and authenticated by Chief Officer of Coast Guard at Howth.

Date, Week ending—	Average daily Number of Boats employed.				Number of Mease of 635 fish each.	Average price per Mease.	Gross Receipts.	Number of days Employed.	Observations.
	Cornish.	Scotch.	Manx.	Irish.					
1871.						£ s. d.	£ s. d.		
June 10,	—	17	—	9	410	1 5 7½	525 0 0	1	Good fish.
" 17,	—	14	1	37	795	1 7 9½	1,104 6 0	5	Do.
" 24,	3	31	1	58	1,460	1 12 3½	2,357 10 0	5	Do.
July 1,	6	34	3	44	1,360	1 14 9	2,361 10 0	3	Do.
" 8,	71	34	2	61	1,517	2 4 4½	3,364 18 6	4	Do.
" 15,	46	31	1	47	2,750	1 12 3½	4,486 5 0	5	Do.
" 22,	88	34	1	63	2,320	1 8 2½	3,271 5 0	6	Do.
" 29,	65	23	2	55	1,820	1 8 9	2,162 10 0	5	Do.
August 5,	41	6	—	51	2,370	0 18 7	2,203 0 0	5	Do.
" 12,	31	4	—	51	4,650	0 10 0½	2,330 0 0	5	Do.
" 19,	21	9	—	63	3,250	0 18 6½	3,008 15 0	5	Do.
" 26,	30	16	4	76	3,240	0 18 2½	2,949 12 6	4	Do.; and some mixed quality.
September 2,	28	26	33	85	3,380	0 9 6	1,604 10 0	4	Good fish.
" 9,	19	26	14	46	780	0 18 7	724 10 0	5	Do.; and some mixed.
" 16,	8	17	17	31	2,600	1 0 0½	2,602 10 0	5	Good fish.
" 23,	4	9	22	36	3,364	0 18 0½	3,034 18 6	5	Do.
" 30,	1	3	8	4	610	1 1 6½	656 10 0	3	Do.
October 7,	2	5	23	34	2,119	0 19 11	2,110 2 0	5	Do.; and some mixed.
" 14,	1	4	94	58	2,990	0 15 11½	2,388 5 0	5	Do. do.
" 21,	2	7	137	98	5,160	0 13 9½	3,558 0 0	4	Good fish.
" 28,	2	10	168	113	3,600	0 12 3½	2,217 10 0	4	Do.; and some mixed.
November 4,	—	—	—	—	—	—	—	—	No boats fished this week.
" 11,	—	—	13	18	370	0 12 2½	226 5 0	3	Mixed quality of fish. Fleet broke up and ceased fishing.
Totals,	—	—	—	—	50,915	0 19 3½	49,197 12 6	96	
Average numbers and amounts per day for the 96 days worked,	24	13	24	54	530½	—	512 9 6	—	

APPENDIX, No. 4.

ARDGLASS HARBOUR.

ABSTRACT of Herring Fishing for Season 1871 (which commenced 30th May and ended on 11th October), showing number of Boats employed, and greatest number of Mease caught per Boat; also highest and average price per Mease in each month, and total quantity caught, and gross sum realized.

Month ending	Highest Number of Boats employed on any one Night, English, Irish, and Scotch.	Highest Number of Mease per Boat.	Total Number of Mease for Month.	Highest and Average Price.	Total Amount realized.	Number of Days out.
June 30th,	63	64	3,508	£ s. d. 1 12 0 Highest, 1 2 11 Average,	£ s. d. 3,974 18 8	18
July 31st,	230	110	19,812	1 17 6 Highest, 1 1 11 Average,	21,456 6 0	21
August 31st,	300	120	16,784	1 5 0 Highest, 0 13 8 Average,	11,480 2 6	20
September 30th,	51	113	4,672	1 2 6 Highest, 0 18 6 Average,	3,147 4 0	17
October 11th,	32	45	724	0 18 0 Highest, 0 15 8 Average,	568 5 0	7
Total,			45,495		£40,626 10 9	

APPENDIX,
No. 5.

APPENDIX, No. 5.

ARKLOW.

ABSTRACT of Returns of Herring Fishing at Arklow, County Wicklow, in 1871, furnished and authenticated by Mr. THOMAS COLLUM, Chief Officer of Coast Guard.

Date—Week ending.	No. of Boats daily employed; English, Irish, and Scotch.	No. of Mease captured.	Average Price per Mease.	Gross Amount realized.	No. of Days employed.
1871.			£ s. d.	£ s. d.	
June 10th, . . .	200	1,350	1 17 6	2,531 5 0	3
„ 17th, . . .	201	4,267	1 12 7½	6,963 0 0	5
„ 24th, . . .	200	3,770	1 12 6½	6,132 0 0	6
July 1st, . . .	200	2,465	1 12 1½	3,960 2 0	5
„ 8th, . . .	260	1,326	2 0 1	2,671 15 0	5
„ 15th, . . .	190	1,831	1 11 11½	2,926 10 0	5
„ 22nd, . . .	100	260	1 8 0½	364 15 0	5
	—	15,269	—	25,549 7 0	34
Daily Averages for the } 34 days worked,	192	449	1 13 5½	751 9 0½	—

APPENDIX, No. 6.

KILKEEL.

ABSTRACT of Returns of Herring Fishing in 1871, furnished and authenticated by Mr. JEREMIAH DONOVAN, Clerk of Works.

Date.	Daily Average Number of Boats employed.				Gross Number of Mease taken.	Average Price per Mease.	Gross Receipt.	No. of Days Worked.	Observations.
1871.	Cornish.	Scotch.	Manx.	Irish.		£ s. d.	£ s. d.		
July, . . .	2	.	.	42	2,077	1 2 7½	2,350 12 0	27	As this is not a favourable market for the disposal of the fish, the boats always go to better markets when they have any large quantities of fish—viz., to Carlingford, Warrenpoint, and sometimes to Howth, so that the amount realized at this place does not represent the proceeds of the boats belonging to this locality.
August, . . .	3	2	1	16	1,828	0 11 8½	1,072 5 0	18	
September, . . .	.	.	1	5	815	0 12 7½	513 11 0	13	
October, . . .	.	.	1	7	410	0 13 0	266 10 0	9	
	.	.	.	.	5,130	—	4,202 18 0	67	
Daily Averages for the 67 days worked. }	1	1	1	23	76½	0 16 4½	62 14 7	.	

APPENDIX, No. 7.

LIST OF STONE WEIRS in Ireland used for SALMON FISHING, with their Breadth, and the size of the Queen's Gap or share maintained therein respectively.

NAME OF			Breadth of Stream.	Size of Queen's Gap previous to passing of 26 & 27 Vic., c. 114.	OBSERVATIONS.
Fishery District.	River.	Weir.			
Ballinakill, . . .	Bundorragha, . .	Bundorragha, . .	Ft. in. about 60 0	Ft. in. 10 0	Not used.
	Ass or Errive, . .	Ashleagh, . . .	„ 60 0	No gap, .	Ditto.
Bangor, . . .	Owenmore, . . .	Goulamore, . . .	„ 429 0	No gap, .	Ditto.
	Munhim, . . .	Munhim, . . .	„ 34 0	No gap, .	Ditto.
	Newport, . . .	Newport, . . .	158 4	. . .	Gap 15 feet 10 inches. Not used.
Ballina, . . .	Moy, . . .	Ballina, . . .	341 8	No gap, .	Do. 34 feet 2 inches.
	Ditto, . . .	Foxford, . . .	295 10	11 0	Do. 29 feet 7 inches, weir not used.
Sligo, . . .	Sligo, . . .	. . . . .	432 0	No gap, .	Not used. A fishing mill-dam.
Ballyshannon, . .	Bundrowes, . . .	Bundrowes, . . .	68 4	No gap, .	Gap 6 feet 10 inches.
	Erne, . . .	Erne, . . .	. . .	. . .	A fishing mill-dam.
	Inver, . . .	. . . . .	about 105 0	No gap, .	Not used.
	Ditto, . . .	Eake, . . .	„ 82 0	No gap, .	Ditto.
Coleraine, . . .	Bann, . . .	The Cutts of Coleraine,	455 0	18 0	A fishing mill-dam. Pass, 30 feet in breadth, opened.
Ballycastle, . . .	Bush, . . .	. . . . .	230 0	No gap, .	Gap 12 feet 9 inches.
Drogheda, . . .	Boyne, . . .	Oldbridge, . . .	240 0	22 6	Do. 24 feet.
	Ditto, . . .	Rosmaree, . . .	300 0	13 and 35	Do. 30 feet.
	Ditto, . . .	Newgrange, . . .	224 0	No gap, .	Do. 18 feet.
Letterkenny, . . .	Leenane, . . .	Rathmelton, . . .	159 0	No gap, .	Two Gaps of 6 feet each.
	Lackagh, . . .	Lackagh, . . .	211 0	No gap, .	Gap 20 feet. Not used.
	Owenea, . . .	Owenea, . . .	145 0	No gap, .	Gap 14½ feet. Not used.
Londonderry, . . .	Finn, . . .	Killygordon, . . .	about 198 0	No gap, .	Do. 20 feet. Not used.
	Buncrana, . . .	Buncrana, . . .	180 0	No gap, .	Do. 18 feet.
Waterford, . . .	Nore, . . .	Innistigue, . . .	173 0	60 0	Do. 60 feet.
	Ditto, . . .	Rockview, . . .	98 0	78 0	Do. 78 feet.
	Ditto, . . .	Jerpoint, . . .	99 0	66 0	Do. 66 feet.
	Ditto, . . .	Dysart, . . .	93 0	47 0	Do. 47 feet.
	Suir, . . .	Coolnamuck, . . .	176 0	47 0	Do. 47 feet.
	Tay, . . .	Woodhouse, . . .	55 0	No gap, .	Do. 6 feet.
Lismore, . . .	Blackwater, . . .	Lismore Weir, . .	315 0	No gap, .	Do. 31 feet 6 inches.
Cork, . . .	Lee, . . .	The North Lee Fishery Weir or "Hayes Weir."	408 0	No gap, .	A fishing mill-dam. Not used.
	Ditto, . . .	The weir above Wellington Bridge.	780 0	No gap, .	Ditto.
	Ditto, . . .	"The Upper Gill Abbey Weir."	378 0	No gap, .	Ditto.
	Ditto, . . .	"The Sugar House Weir."	114 0	No gap, .	Gap 11 feet 5 inches.
Killarney, . . .	Carra, . . .	Carra, . . .	160 0	No gap, .	Gap 16 feet.
	Waterville or Currane,	Waterville, . . .	under 40 0	No gap, .	Extension of weekly close season from noon on Friday to noon on Monday ordered instead of gap, stream being under 40 feet—26 & 27 Vic., c. 114, s. 11.
Limerick, . . .	Shannon, . . .	Lax Weir, . . .	840 0	21 0	Gap 50 feet.
Galway, . . .	Galway, . . .	Galway Salmon Weirs,	205 10	16 0	Do. 20 feet 7 inches.
	Owenmore or Great River.	Ballinahinch Trout and Salmon Weirs.	228 0	No gap, .	Do. 22 feet. Not used.
	Spiddal, . . .	Spiddal Salmon Weir,	varies greatly; 285 0 to 12 0	No gap, .	Do. 12 feet. Not used.
	Furbough, . . .	The Furbough Salmon Weir.	14 0	No gap, .	Do. 3 feet. Not used.

RESULT OF INQUIRIES held by the SPECIAL COMMISSIONERS OF IRISH FISHERIES into the

No.	Where Fixed Net situated.	Description of Fixed Net.	Name of Person maintaining and using Fixed Net.	Name of Owner of Fixed Net, or of Land to which Net attached.	Name of Townland to which Net attached.	Parish.
1	Barrow, otherwise Ross, otherwise Nore and Barrow Rivers conjoined.	Head Weir, .	Thomas Murphy, .	John H. Glascott, .	Dunganstown, .	Whitechurch, .
2	Barrow River,	Ditto, .	Arthur Kavanagh, .	Arthur Kavanagh, .	Drummin, .	St. Mullin's .
3	Barrow, otherwise Ross River, otherwise Nore and Barrow Rivers conjoined.	Ditto, .	Joseph Hunt, .	W. M. Glascott, .	Mountanago, .	Whitechurch, .
4	Ditto,	Ditto, .	Walter Sweetman, .	Walter Sweetman, .	Annaghs, .	Shanbogh, .
5	Ditto,	Ditto, .	Michael and D. Cody, .	—	Carrickloney, .	Kilmakavege, .
6	Ditto,	Ditto, .	James Doody, .	—	Great Island, .	Kilmokea, .
7	Ditto,	Ditto, .	Samuel Bennett, .	—	Ditto, .	Ditto, .
8	Ditto,	Ditto, .	Richard Cashen, .	—	Shanbogh, Upper, .	Shanbogh, .
9	Ditto,	Ditto, .	John Sherlock, .	—	Great Island, .	Kilmokea, .
10	Ditto,	Ditto, .	P. Shanahan, .	—	Ditto, .	Ditto, .
11	Ditto,	Ditto, .	George Kent, .	—	Ditto, .	Ditto, .
12	Suir,	Ditto, .	John Lynch, .	N. Power, .	Faithlegg, .	Faithlegg, .
13	Ditto,	Ditto, .	Hugh Treacey, .	Ditto, .	Ditto, .	Ditto, .
14	Ditto,	Ditto, .	John Walsh, .	—	Cheekpoint, .	Ditto, .
15	Suir, Nore, and Barrow Rivers conjoined.	Ditto, .	John Lynch, .	—	Coolbunna, .	Ditto, .
16	Ditto,	Stake Weir, .	Michael Dobbyn, .	Marquess of Waterford, .	Crooke, .	Crooke, .
17	Ditto,	Ditto, .	Eliza Coghlan, .	J. J. D. Coghlan, .	Dromina, .	Ditto, .
18	Nore,	Head Weir, .	W. F. F. Tighe, .	W. F. F. Tighe, .	Innistioige, .	Innistioige, .
19	Barrow, otherwise Ross River, otherwise Nore and Barrow conjoined.	Ditto, .	Patrick Byrne, .	E. W. Nunn, .	Camlin, .	Old Ross, .
20	Barrow,	Ditto, .	W. F. F. Tighe, .	W. F. F. Tighe, .	Kilconnelly, .	The Rower, .
21	Ditto,	Ditto, .	John Eligot, .	D. Burtchell, .	Coolrainy, .	Ditto, .
22	Barrow, otherwise Ross River, otherwise Nore and Barrow conjoined.	Ditto, .	John Forrestal, .	—	Carrickloney, .	Kilmakavege, .
23	Nore River,	Ditto, .	John Hunt, .	Mrs. and Miss Vicars, .	Brownson, .	Dysertmoon, .
24	Suir River,	Ditto, .	Paul Anderson, .	N. A. Power, .	Gorteen, .	Rathpatrick, .
25	Ditto,	Ditto, .	Cath. and P. Moroney, .	N. Power, .	Drumdowney, Upper, .	Ditto, .
26	Barrow, otherwise Ross River, otherwise Nore and Barrow conjoined.	Ditto, .	Michael Irish, .	Dr. J. Mackesy, .	Ballyverneen, .	Ballygurrim, .
27	Ditto,	Ditto, .	Thomas Murphy, .	Col. Chas. Kearney, .	Kearney's Bay, .	Kilcolumb, .
28	Ditto,	Ditto, .	Joseph Hunt, .	Peter Strange, .	Rochestown, .	Ditto, .
29	Ditto,	Ditto, .	P. Hannebury, .	Ditto, .	Ditto, .	Ditto, .
30	Ditto,	Ditto, .	J. Doyle, .	J. Devereux, .	Ringville, .	Ditto, .
31	Ditto,	Ditto, .	J. Bolger, .	Ditto, .	Ditto, .	Ditto, .
32	Ditto,	Ditto, .	W. Walsh, .	Mrs. Bolton, .	Drumdowney, Upper, .	Rathpatrick, .
33	Ditto,	Ditto, .	J. Sullivan, .	P. Hannebury, .	Ballinlaw, .	Kilcolumb, .
34	Ditto,	Ditto, .	John Brien, .	N. Power, .	Drumdowney, Upper, .	Rathpatrick, .
35	Suir River,	Ditto, .	David Bennett, .	Ditto, .	Ditto, .	Ditto, .
36	Barrow, otherwise Ross River, otherwise Nore and Barrow conjoined.	Ditto, .	James Butler, .	Samuel King, .	Fisherstown, .	Kilmokea, .
37	Ditto,	Ditto, .	Pierce Cox, .	Ditto, .	Ditto, .	Ditto, .
38	Ditto,	Ditto, .	James Kavanagh, .	—	Ditto, .	Ditto, .
39	Suir, Nore, and Barrow conjoined, otherwise Waterford Harbour.	Scotch or Stake Weir, .	A. Ryan, or Hayes, .	Lord Templemore, .	Duncannon, .	St. James and Dunbrody, .
40	Ditto,	Ditto, .	M. Doyle, .	Ditto, .	Clonsharragh, .	Ditto, .
41	Ditto,	Ditto, .	A. Stephens, .	Ditto, .	Ditto, .	Ditto, .
42	Suir,	Head Weir, .	N. A. Power, .	N. A. Power, .	Gorteen, .	Rathpatrick, .
43	Shannon River,	Fly-Net, .	Randle Borough, .	Randle Borough, .	Querrin, .	Moyarta, .
44	Ditto,	Stake-Net, .	S. M'Auliffe, .	Ditto, .	Shangannagh, .	Ditto, .
45	Ditto,	Ditto, .	William Kennedy, .	John Cox, .	Clarefield, .	Ditto, .
46	Ditto,	Ditto, .	D. M'Auliffe, .	Francis Keane, .	Scattery Island, .	Kilrush, .
47	Ditto,	Fly-Net, .	Francis Connell, .	Ditto, .	Ditto, .	Ditto, .
48	Ditto,	Stake-Net, .	S. M'Auliffe, .	Benjamin Cox, .	Clarefield, .	Moyarta, .
49	Ditto,	Ditto, .	J. Connell and D. M'Auliffe, .	Colonel Vandeleur, .	Carrowncalla, S., .	Kilrush, .
50	Ditto,	Ditto, .	Francis Connell, .	Francis Keane, .	Scattery Island, .	Ditto, .
51	Ditto,	Fly-Net, .	Ditto, .	Ditto, .	Ditto, .	Ditto, .
52	Ditto,	Ditto, .	John Commins, .	Colonel Vandeleur, .	Inishbig or Hog Island, .	Ditto, .
53	Ditto,	Ditto, .	James Connell, .	Ditto, .	Ballynote, West, .	Ditto, .
54	Ditto,	Ditto, .	John Slattery, .	Ditto, .	Ballymacrinan, .	Killimor, .
55	Ditto,	Ditto, .	S. M'Auliffe, .	Ditto, .	Lakyle, South, .	Kilofin, .
56	Ditto,	Ditto, .	Ditto, .	Ditto, .	Ditto, .	Ditto, .
57	Ditto,	Ditto, .	S. M'Auliffe and T. M'Namara, .	Ditto, .	Mount Shannon, West, .	Ditto, .
58	Ditto,	Stake-Net, .	Marcus Sheehy, .	Ditto, .	Mount Shannon Wood, .	Ditto, .
59	Ditto,	Fly-Net, .	Denis M'Auliffe, .	Ditto, .	Cloorkerry, West, .	Ditto, .
60	Ditto,	Stake-Net, .	S. M'Auliffe, .	Lord Leconfield, .	Erribul, .	Killdane, .
61	Ditto,	Ditto, .	S. Cunningham, .	Ditto, .	Ditto, .	Ditto, .
62	Ditto,	Ditto, .	James O'Neill, .	William Ashe, .	Shannakeabeg, .	Ditto, .
63	Ditto,	Ditto, .	John Griffin, .	James Kelly, .	Cahiracoon, .	Kildysart, .
64	Ditto (Clonderalaw Bay), .	Ditto, .	Daniel Molony, .	Lord Anally, .	Kilkerrin, .	Kilofin, .
65	Ditto,	Ditto, .	Ditto, .	Ditto, .	Ditto, .	Ditto, .
66	Ditto,	Ditto, .	James Browne, .	Ditto, .	Lakyle, North, .	Ditto, .
67	Ditto,	Ditto, .	D. Molony, .	Ditto, .	Ballina, .	Ditto, .
68	Ditto,	Ditto, .	Ditto, .	Ditto, .	Kilkerrin, .	Ditto, .
69	Ditto,	Fly-Net, .	Thomas M'Mahon, .	Richard Barclay, .	Ballyartney, .	Ditto, .

No. 8.

Legality or Illegality of Fixed Nets erected or used for catching Salmon in Ireland.

APPENDIX,
No. 8.

No.	Barony.	County.	Judgment of Commissioners.	Date of Judgment.	Whether Judgment of Commissioners Appealed against.	Result of Appeal in Court of Queen's Bench.
1	Shelburne, .	Wexford, .	To be abated, as being injurious to navigation, and erected without the title required by the 5th and 6th Vic., c. 106.	17 Oct. 1863,	Appeal, . . .	Appeal withdrawn.
2	St. Mullin's, 1	Carlow, .	To be abated, not having been legally erected in 1862.	Ditto, .	No appeal.	—
3	Shelburne, .	Wexford, .	To be abated, as being injurious to navigation, and erected without the title required by the 5th and 6th Vic., c. 106.	Ditto, .	Appeal, . . .	Judgment affirmed.
4	Ida, .	Kilkenny, .	Ditto,	19 Oct. 1863,	Ditto, .	Ditto.
5	Ditto, .	Ditto, .	Ditto,	Ditto, .	No appeal.	—
6	Shelburne, .	Wexford, .	Ditto,	Ditto, .	Ditto.	—
7	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto.	—
8	Ida, .	Kilkenny, .	To be abated, not having been legally erected in 1862,	Ditto, .	Ditto.	—
9	Shelburne, .	Wexford, .	To be abated, as being injurious to navigation and erected without the title required by the 5th and 6th Vic., cap. 106.	Ditto, .	Ditto.	—
10	Ditto, .	Ditto, .	To be abated, not having been legally erected in 1862,	Ditto, .	Ditto.	—
11	Ditto, .	Ditto, .	To be abated, as being injurious to navigation,	20 Oct. 1863,	Appeal, . . .	Judgment affirmed.
12	Gualtiere, .	Waterford, .	Ditto, and erected without the title required by the 5th and 6th Vic., c. 106.	21 Oct. 1863,	No appeal.	—
13	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto.	—
14	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto.	—
15	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto.	—
16	Ditto, .	Ditto, .	Ditto,	22 Oct. 1863,	Appeal, . . .	Judgment affirmed.
17	Ditto, .	Ditto, .	Ditto,	24 Oct. 1863,	Ditto, .	Ditto.
18	Gowran, .	Kilkenny, .	To be abated, as injurious to navigation,	26 Oct. 1863,	Ditto, .	Ditto.
19	Bantry, .	Wexford, .	Ditto, and erected without the title required by the 5th and 6th Vic., c. 106.	Ditto, .	Ditto, .	Ditto.
20	Ida, .	Kilkenny, .	Ditto,	Ditto, .	No appeal.	—
21	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto.	—
22	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto.	—
23	Ditto, .	Ditto, .	Ditto,	27 Oct. 1863,	Ditto.	—
24	Ditto, .	Ditto, .	Ditto,	29 Oct. 1863,	Ditto.	—
25	Ditto, .	Ditto, .	Ditto,	10 Dec. 1863,	Ditto.	—
26	Ditto, .	Ditto, .	Ditto,	Ditto, .	Appeal, . . .	Appeal withdrawn.
27	Ditto, .	Ditto, .	Ditto,	11 Dec. 1863,	Ditto, .	Ditto.
28	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto, .	Ditto.
29	Ditto, .	Ditto, .	Ditto,	Ditto, .	No appeal.	—
30	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto.	—
31	Ditto, .	Ditto, .	Ditto,	Ditto, .	Appeal, . . .	Judgment affirmed.
32	Ditto, .	Ditto, .	Ditto,	Ditto, .	No appeal.	—
33	Ditto, .	Ditto, .	Ditto,	12 Dec. 1863,	Ditto.	—
34	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto.	—
35	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto.	—
36	Shelburne, .	Wexford, .	Ditto,	Ditto, .	Appeal, . . .	Appeal withdrawn.
37	Ditto, .	Ditto, .	Ditto,	Ditto, .	No appeal.	—
38	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto.	—
39	Ditto, .	Ditto, .	To be abated, as being injurious to navigation, .	16 Dec. 1863,	Appeal, . . .	Judgment affirmed.
40	Ditto, .	Ditto, .	To be abated, as being erected in narrow channel,	4 April, 1865,	No appeal.	—
41	Ditto, .	Ditto, .	To be abated, as being injurious to navigation, and being illegally erected—extending beyond low-water mark.	23 Dec. 1863,	Appeal, . . .	Judgment affirmed.
42	Ida, .	Kilkenny, .	To be abated, as injurious to navigation, and erected without the title required by the 5th and 6th Vic., c. 106.	Ditto, .	No appeal.	—
43	Moyarta, .	Clare, .	To be abated, as erected without the title required by the 5th and 6th Vic., c. 106.	1 Jan. 1864,	Ditto.	—
44	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto.	—
45	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto.	—
46	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto.	—
47	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto.	—
48	Ditto, .	Ditto, .	Ditto,	2 Jan. 1864,	Ditto.	—
49	Ditto, .	Ditto, .	Ditto,	Ditto, .	Appeal, . . .	Judgment affirmed.
50	Ditto, .	Ditto, .	Ditto,	Ditto, .	No appeal.	—
51	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto.	—
52	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto.	—
53	Ditto, .	Ditto, .	Ditto,	Ditto, .	Appeal, . . .	Judgment affirmed.
54	Clanderalaw, .	Ditto, .	Ditto,	Ditto, .	Ditto.	Ditto.
55	Ditto, .	Ditto, .	Ditto,	4 Jan. 1864,	No appeal.	—
56	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto.	—
57	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto.	—
58	Ditto, .	Ditto, .	Ditto,	Ditto, .	Appeal, . . .	Judgment reversed.
59	Ditto, .	Ditto, .	Ditto,	Ditto, .	No appeal.	—
60	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto.	—
61	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto.	—
62	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto.	—
63	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto.	—
64	Ditto, .	Ditto, .	Ditto,	7 Jan. 1864,	Appeal, . . .	Judgment reversed.
65	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto, .	Ditto.
66	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto, .	Judgment affirmed.
67	Ditto, .	Ditto, .	Ditto, and not having been legally erected in 1862,	5 Jan. 1864,	No appeal.	—
68	Ditto, .	Ditto, .	Ditto,	Ditto, .	Ditto.	—
69	Ditto, .	Ditto, .	Ditto,	7 Jan. 1864,	Ditto.	—

No.	Where Fixed Net situated.	Description of Fixed Net.	Name of Person maintaining and using Fixed Net.	Name of Owner of Fixed Net, or of Land to which Net attached.	Name of Townland to which Net attached.	Parish.
70	River Barrow, otherwise Nore and Barrow conjoined.	Head Weir.	Richard Hewitson.	M. W. Knox.	Kilmannock.	Kilmokea.
71	River Suir.	Ditto.	G. Giles.	G. Giles.	Kilmurry.	Rathpatrick.
72	Rivers Suir, Nore, and Barrow conjoined, otherwise Waterford Harbour.	Stake Weir.	James Ryan.	Lord Ely.	Duncannon.	St. James and Dunbrody.
73	Slade Bay.	Bag-Net.	W. Breen.	Ditto.	Slade.	Hook.
74	Suir, Nore, and Barrow conjoined.	Head Weir.	J. Hanlon and others.	Lord Templemore.	Nook.	St. James and Dunbrody.
75	Ditto.	Ditto.	Anthony Wallis.	Ditto.	Ballyhack.	Ditto.
76	Ditto.	Stake-Net.	Arthur N. O'Neill.	Lord Carew.	Woodstown, Lower.	Crooka.
77	Ditto.	Ditto.	Ditto.	Ditto.	Knockaveelish.	Killea.
78	Suir, King's Channel.	Ditto.	Mary O'Neill.	Mary O'Neill.	Knockboy.	Ballygunner.
79	Ditto.	Ditto.	Ditto.	Ditto.	Ditto.	Ditto.
80	Suir, Nore, and Barrow conjoined.	Head Weir.	John Hanlon & others.	Lord Templemore.	Saltmills.	St. James and Dunbrody.
81	Ditto.	Ditto.	Ditto.	Ditto.	Ballyhack.	Ditto.
82	Shannon.	Stake-Net.	Stephen Cunningham.	Bryan O'Loughlin.	Ailreebeg.	Killdane.
83	Ditto.	Fly-Net.	R. W. C. Reeves.	R. W. C. Reeves.	Poulnadaree.	Killimor.
84	Ditto.	Stake-Net.	Ditto.	Ditto.	Burrane, Lower.	Ditto.
85	Ditto.	Ditto.	Ditto.	Ditto.	Ditto.	Ditto.
86	Ditto.	Ditto.	Ditto.	Ditto.	Ditto.	Ditto.
87	Ditto.	Ditto.	Michael Colpoys.	Colonel Hickman.	Knock.	Kilmurry.
88	Ditto.	Ditto.	S. M'Cauliffe & John Brooks.	Ditto.	Ditto.	Ditto.
89	Ditto.	Ditto.	Eliza Hodnett.	Ditto.	Kilmore.	Ditto.
90	Ditto.	Ditto.	Ditto.	Ditto.	Ditto.	Ditto.
91	Ditto.	Ditto.	Ditto.	Ditto.	Ditto.	Ditto.
92	Ditto.	Ditto.	John Houlehan.	Ditto.	Carrowbane.	Ditto.
93	Ditto.	Ditto.	S. Pegum.	Rev. T. Butler.	Poulnadaree.	Killimor.
94	Ditto.	Ditto.	Ditto.	Ditto.	Ditto.	Ditto.
95	Ditto.	Ditto.	Henry S. O'Brien.	Henry S. O'Brien.	Portdrine.	Kilfintinan.
96	Ditto.	Ditto.	S. M'Auliffe.	T. R. Henn.	Slieveadooley.	Kilofin.
97	Ditto.	Ditto.	T. Naughten & others.	E. T. Massey.	Ballycananna.	Ballysteen.
98	Ditto.	Ditto.	M. Shaughnessy and others.	Lord Guillemore.	Courtbrown.	Akeaton.
99	Ditto.	Ditto.	S. M'Cauliffe.	Colonel Hickman.	Knock.	Kilmurry.
100	Ditto.	Ditto.	J. Browne.	Lord Montague.	Leahys.	Robertstown.
101	Ditto.	Ditto.	Ditto.	Ditto.	Durnish.	Shanagolden.
102	Ditto.	Ditto.	Ditto.	Ditto.	Foynes Island.	Robertstown.
103	Ditto.	Ditto.	Ditto.	Ditto.	Ditto.	Ditto.
104	Ditto.	Ditto.	Ditto.	Ditto.	Mount Trenchard.	Loghill.
105	Ditto.	Ditto.	Ditto.	Ditto.	Ditto.	Ditto.
106	Ditto.	Ditto.	P. Sheehan.	Lord Clare.	Ballynaah (Clare).	Robertstown.
107	Ditto.	Ditto.	M. M'Namarra.	R. Bateson.	Loghill.	Loghill.
108	Ditto.	Ditto.	John Griffin.	Thomas Royse.	Carrowbanebeg.	Ditto.
109	Ditto.	Ditto.	M. M'Namarra.	Earl of Clare.	Ditto.	Ditto.
110	Ditto.	Ditto.	J. Browne.	C. Minchin.	Killacolla.	Kilfergus.
111	Ditto.	Ditto.	Margaret Putland and others.	Knight of Glin.	Caheragh.	Ditto.
112	Ditto.	Ditto.	Ditto.	Ditto.	Glin Demesne.	Ditto.
113	Ditto.	Ditto.	Ditto.	Ditto.	Farranmiller.	Ditto.
114	Ditto.	Ditto.	J. Browne.	Elizabeth Standish.	Killacolla (Barker).	Ditto.
115	Ditto.	Fly-Net.	W. B. Barrington.	W. B. Barrington.	Ballyhoolahan.	Loghill.
116	Ditto.	Ditto.	J. Browne.	Rev. R. Fitzgerald.	Ballydonohoe.	Kilfergus.
117	Ditto.	Stake-Net.	P. J. Mayne.	P. J. Mayne.	East Astee.	Ahavallin.
118	Ditto.	Ditto.	Ditto.	Ditto.	West Astee.	Ditto.
119	Ditto.	Ditto.	J. Pim.	W. C. Hickey.	Cloonaman.	Ditto.
120	Ditto.	Ditto.	C. Sandes.	C. Sandes.	Carrig Island.	Ditto.
121	Ditto.	Ditto.	J. Pim.	R. Leslie.	Kilcolgan, Lower.	Kilnaughten.
122	Ditto.	Ditto.	Alicia Wren.	Lord Listowel.	Corras and Sand Hills.	Kilconnelly.
123	Ditto.	Fly-Net.	Ditto.	Ditto.	Castlequarner.	Ditto.
124	Ditto.	Stake-Net.	Ditto.	Leslie Wren.	Kylatallen.	Ditto.
125	Ditto.	Ditto.	W. Sandes.	T. Sandes.	Carhoonakinneely.	Kilnaughten.
126	Ditto.	Ditto.	Alicia Wren.	Leslie Wren.	Carrigane.	Ahavallin.
127	Sea off Coast of County Cork.	Bag-Net.	C. Desmond.	Samuel Hodder.	Ringabella.	Tracton.
128	Ditto.	Fly-Net.	W. Atkinson.	Lord Ponsonby.	Redbarn.	Cloonpriest.
129	Ditto.	Ditto.	N. T. Foley.	Murdoch Green.	Summerfield.	Youghal.
130	Ditto.	Stake-Net.	J. Ronayne.	Ditto.	Ditto.	Ditto.
131	Ditto.	Fly-Net.	N. T. Foley.	D. L. Lewis.	Claycastle.	Ditto.

Legality or Illegality of Fixed Nets erected or used for catching Salmon in Ireland—*continued.*APPENDIX,
No. 8.

No.	Bareny.	County.	Judgment of Commissioners.	Date of Judgment.	Whether Judgment of Commissioners Appealed against.	Result of Appeal in Court of Queen's Bench.
70	Shelburne, .	Wexford, .	To be abated, as injurious to navigation, and as erected without the title required by 5 & 6 Vic., c. 106.	10 Mar. 1864,	Appeal, . . .	Sent back for further inquiry as to partial abatement.—See No. 272.
71	Ida, . . .	Kilkenny, .	Ditto,	14 Mar. 1864,	No appeal.	—
72	Shelburne, .	Wexford, .	To be abated, as erected without the title required by 5 & 6 Vic., c. 106.	15 Mar. 1864,	Appeal,	Withdrawn.
73	Ditto, . .	Ditto, . .	Ditto,	Ditto, . .	No appeal.	—
74	Ditto, . .	Ditto, . .	Legally erected,	16 Mar. 1864,	—	—
75	Ditto, . .	Ditto, . .	To be abated, as injurious to navigation,	Ditto, . .	Appeal, . . .	Withdrawn.
76	Gaultiere, .	Waterford, .	To be abated, as erected without the title required by 5 & 6 Vic., c. 106.	17 Mar. 1864,	Ditto, . . .	Sent back for reconsideration.—See Nos. 261 to 264 inclusive.
77	Ditto, . .	Ditto, . .	Ditto,	Ditto, . .	Ditto, . . .	
78	Ditto, . .	Ditto, . .	Ditto,	18 Mar. 1864,	Ditto, . . .	
79	Ditto, . .	Ditto, . .	Ditto,	Ditto, . .	Ditto, . . .	
80	Shelburne, .	Wexford, .	To be abated, Lord Templemore consenting, .	Ditto, . .	No appeal.	—
81	Ditto, . .	Ditto, . .	Ditto,	Ditto, . .	Ditto, . . .	—
82	Clonderalaw, .	Clare, . .	Legally erected,	26 Mar. 1864,	—	—
83	Ditto, . .	Ditto, . .	To be abated; not erected in 1862,	28 Mar. 1864,	No appeal.	—
84	Ditto, . .	Ditto, . .	To be abated, as erected without the title required by 5 & 6 Vic., c. 106; and extending beyond low-water mark. The latter question to be tried by Commissioners when appeal on title decided.	29 Mar. 1864,	Appeal, . . .	Judgment reversed.
85	Ditto, . .	Ditto, . .	Ditto,	Ditto, . .	Ditto, . . .	Sent back.—See No. 266.
86	Ditto, . .	Ditto, . .	To be abated, as erected without the title required by 5 & 6 Vic., c. 106, and as being injurious to navigation.	Ditto, . .	Ditto, . . .	Judgment affirmed.
87	Ditto, . .	Ditto, . .	To be abated; not erected in 1862,	30 Mar. 1864,	Ditto, . . .	Ditto.
88	Ditto, . .	Ditto, . .	Ditto,	Ditto, . .	No appeal.	—
89	Ditto, . .	Ditto, . .	To be abated, as injurious to navigation, and as erected without the title required by 5 & 6 Vic., c. 106.	31 Mar. 1864,	Appeal, . . .	Judgment affirmed.
90	Ditto, . .	Ditto, . .	To be abated, as erected without the title required by 5 & 6 Vic., c. 106.	Ditto, . .	Ditto, . . .	Judgment reversed.
91	Ditto, . .	Ditto, . .	To be abated; not erected in 1862,	Ditto, . .	Ditto, . . .	Judgment affirmed.
92	Ditto, . .	Ditto, . .	To be abated, as injurious to navigation, and as erected without the title required by 5 & 6 Vic., c. 106.	Ditto, . .	Ditto, . . .	Ditto.
93	Ditto, . .	Ditto, . .	To be abated by consent of Mr. Butler, . . .	2 April, 1864,	No appeal.	—
94	Ditto, . .	Ditto, . .	Ditto,	Ditto, . .	Ditto, . . .	—
95	Bunratty, Lr.	Ditto, . .	To be abated, as being injurious to navigation, and to the public right of fishing.	4 April, 1864,	Appeal, . . .	New trial granted upon point of form, see No. 250.
96	Clonderalaw, .	Ditto, . .	To be abated, as erected without the title required by 5 & 6 Vic., c. 106.	Ditto, . .	No appeal.	—
97	Kenry, . . .	Limerick, .	Ditto,	Ditto, . .	Ditto, . . .	—
98	Lower Connello, .	Ditto, . .	Ditto,	Ditto, . .	Ditto, . . .	—
99	Clonderalaw, .	Clare, . .	Ditto,	Ditto, . .	Ditto, . . .	—
100	Shanid, . . .	Limerick, .	To be abated, as injurious to navigation, . . .	5 April, 1864,	Ditto, . . .	—
101	Ditto, . . .	Ditto, . .	To be abated, as erected without the title required by 5 & 6 Vic., c. 106, and injurious to public right of fishing.	6 April, 1864,	Appeal, . . .	Judgment reversed.
102	Ditto, . . .	Ditto, . .	To be abated, as erected without the title required by 5 & 6 Vic., c. 106.	Ditto, . .	Ditto, . . .	Ditto.
103	Ditto, . . .	Ditto, . .	Ditto,	Ditto, . .	Ditto, . . .	Ditto.
104	Ditto, . . .	Ditto, . .	Ditto,	Ditto, . .	Ditto, . . .	Ditto.
105	Ditto, . . .	Ditto, . .	To be abated by consent; not erected in 1862,	Ditto, . .	No appeal.	—
106	Ditto, . . .	Ditto, . .	To be abated, as erected without the title required by 5 & 6 Vic., c. 106.	7 April, 1864,	Ditto, . . .	—
107	Ditto, . . .	Ditto, . .	Ditto,	Ditto, . .	Ditto, . . .	—
108	Ditto, . . .	Ditto, . .	Ditto,	Ditto, . .	Appeal, . . .	Judgment reversed.
109	Ditto, . . .	Ditto, . .	To be abated, not having been erected in 1862,	Ditto, . .	No appeal.	—
110	Ditto, . . .	Ditto, . .	Legally erected,	Ditto, . .	Appeal, . . .	Judgment affirmed.
111	Ditto, . . .	Ditto, . .	To be abated, as erected without the title required by 5 & 6 Vic., c. 106.	Ditto, . .	Ditto, . . .	Sent back.—See No. 265.
112	Ditto, . . .	Ditto, . .	To be abated; injurious to navigation, . . .	Ditto, . .	No appeal.	—
113	Ditto, . . .	Ditto, . .	To be abated, as erected without the title required by 5 & 6 Vic., c. 106.	Ditto, . .	Ditto, . . .	—
114	Ditto, . . .	Ditto, . .	Ditto,	8 April, 1864,	Appeal, . . .	Appeal withdrawn.
115	Ditto, . . .	Ditto, . .	Legally erected,	Ditto, . .	No appeal.	—
116	Ditto, . . .	Ditto, . .	To be abated, as erected without the title required by 5 & 6 Vic., c. 106, and not erected in 1862.	Ditto, . .	Ditto, . . .	—
117	Inaghticonnor	Kerry, . .	To be abated; not legally erected in 1862, and injurious to the public right of fishing.	11 April, 1864,	Appeal, . . .	Judgment affirmed.
118	Ditto, . . .	Ditto, . .	Ditto,	Ditto, . .	Ditto, . . .	Ditto.
119	Ditto, . . .	Ditto, . .	To be abated, as erected without the title required by 5 & 6 Vic., c. 106.	Ditto, . .	Ditto, . . .	Judgment reversed.
120	Ditto, . . .	Ditto, . .	To be abated; not erected in 1862,	Ditto, . .	No appeal.	—
121	Ditto, . . .	Ditto, . .	Ditto,	Ditto, . .	Ditto, . . .	—
122	Ditto, . . .	Ditto, . .	To be abated, as erected without the title required by 5 & 6 Vic., c. 106.	Ditto, . .	Ditto, . . .	—
123	Ditto, . . .	Ditto, . .	Ditto,	Ditto, . .	Ditto, . . .	—
124	Ditto, . . .	Ditto, . .	Ditto, and not erected in 1862,	12 April, 1864,	Appeal, . . .	Judgment reversed.
125	Ditto, . . .	Ditto, . .	Ditto,	Ditto, . .	Ditto, . . .	Judgment affirmed.
126	Ditto, . . .	Ditto, . .	To be abated, as injurious to public rights of fishing.	Ditto, . .	Ditto, . . .	Judgment reversed; but public right of fishing preserved.
127	Kinallea, . .	Cork, . . .	To be abated, as being within three miles of Carrigaline River mouth.	4 Aug. 1864,	Ditto, . . .	Judgment reversed.
128	Imokilly, . .	Ditto, . . .	To be abated, as erected without the title required by 5 & 6 Vic., c. 106.	8 Aug. 1864,	No appeal.	—
129	Ditto, . . .	Ditto, . .	Ditto,	Ditto, . .	Ditto, . . .	—
130	Ditto, . . .	Ditto, . .	Ditto,	Ditto, . .	Ditto, . . .	—
131	Ditto, . . .	Ditto, . .	To be abated, as injurious to navigation,	Ditto, . .	Ditto, . . .	—

APPENDIX TO THE REPORT OF THE

APPENDIX,
No. 8.

RESULT of INQUIRIES held by the SPECIAL COMMISSIONERS of IRISH FISHERIES into the

No.	Where Fixed Net situated.	Description of Fixed Net.	Name of Person maintaining and using Fixed Net.	Name of Owner of Fixed Net, or of Land to which Net attached.	Name of Townland to which Net attached.	Parish.
132	Sea off Coast of co. Cork,	Bag-Net,	John Walsh,	Roger Davis,	Knockadoon,	Youghal,
133	Ditto,	Ditto,	D. Sullivan,	M. Longfield,	Ballycotton,	Kilmahon,
134	Ballycotton Bay, co. Cork,	Ditto,	J. Litton,	J. Litton,	Ditto,	Ditto,
135	River Blackwater,	Stake-Net,	R. Power,	Trustees of Mrs. Osborne.	Pillpark,	Clashmore,
136	Ditto,	Ditto,	F. Kennedy and others,	Lord Stuart de Decies,	Timknock,	Ditto,
137	Ditto,	Ditto,	H. T. Dennehy,	Ditto,	Ardmullagh,	Ditto,
138	Ditto,	Ditto,	J. Ronayne,	Ditto,	Ditto,	Ditto,
139	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,
140	Ditto,	Ditto,	M. B. Ronayne,	Ditto,	Ditto,	Ditto,
141	Ditto,	Ditto,	G. Crotty,	Ditto,	Coolbagh,	Ditto,
142	Ditto,	Head Weir,	G. Dalton,	Ditto,	Dromana,	Affane,
143	Ditto,	Stake-Net,	M. G. Adams,	Hon. C. W. M. Smythe,	Rincrow,	Templemichael,
144	Ditto,	Ditto,	Hon. C. W. M. Smythe,	Ditto,	Ballynatray,	Ditto,
145	Ditto,	Ditto,	E. M'Sweeney,	—	Templemichael,	Ditto,
146	Ditto,	Ditto,	S. Allen & N. T. Foley,	Samuel Allen,	D'Loughtane,	Kinsalebeg,
147	Ditto,	Ditto,	P. Sliney & J. Harley,	—	Newport, East,	Templemichael,
148	Ditto,	Ditto,	P. Doolan,	Lord Huntingdon,	Ballynaclash,	Clashmore,
149	Ditto,	Ditto,	M. Ronayne,	Ditto,	Ditto,	Ditto,
150	Ditto,	Ditto,	P. Mansfield,	J. Kiely,	Newport, East,	Kilcockan,
151	Ditto,	Ditto,	M. White & W. Murphy,	—	Strancally,	Ditto,
152	Ditto,	Ditto,	M. White,	—	Carnglass,	Ditto,
153	Ditto,	Ditto,	E. Cotter,	Lord Stuart de Decies,	Tinnascart,	Aglish,
154	Ditto,	Ditto,	E. M'Sweeney,	—	Stael,	Templemichael,
155	Ditto,	Ditto,	John Neil and W. Hennessy,	Rev. G. Gumbleton,	Scart,	Kilcockan,
156	Ditto,	Ditto,	R. Browne and Michl. M'Carthy,	C. Musgrave,	Glenassy, or Clooneen,	Aglish,
157	Ditto,	Ditto,	J. Fitzgerald,	C. O'Mahony,	Ballyphillip, East,	Kilcockan,
158	Ditto,	Ditto,	E. Healy,	J. Hargrave,	Dromore,	Aglish,
159	Ditto,	Ditto,	William Collins,	Ditto,	Ditto,	Ditto,
160	Ditto,	Ditto,	Maurice Hickey,	Ditto,	Ditto,	Ditto,
161	Ditto,	Head Weir,	C. Usher,	C. Usher,	Campshire,	Lismore,
162	Ditto,	Ditto,	J. Rice,	—	Killahaly, East,	Ditto,
163	Ditto,	Ditto,	Sir R. Musgrave,	Sir R. Musgrave,	Turin Demeane,	Ditto,
164	Ditto,	Ditto,	Ditto,	Ditto,	Norrisland,	Ditto,
165	Bride,	Ditto,	M. Whelan,	C. Usher,	Campshire,	Ditto,
166	Ditto,	Ditto,	J. M'Grath,	Ditto,	O'Kyle,	Ditto,
167	Ditto,	Ditto,	P. Walsh,	C. Smith,	Snugborough,	Kilwatermoy,
168	Ditto,	Ditto,	J. Connell,	Duke of Devonshire,	Bridane, Lower,	Lismore,
169	Ditto,	Ditto,	R. P. Maxwell,	R. P. Maxwell,	Killanthony,	Kilwatermoy,
170	Ditto,	Ditto,	E. Evans,	R. Oliver,	Ballynaraha,	Lismore,
171	Ditto,	Ditto,	T. Hannigan,	Duke of Devonshire,	Kilnacarra,	Ditto,
172	Ditto,	Ditto,	J. Barry,	Ditto,	Ballinvella,	Ditto,
173	Ditto,	Ditto,	R. P. Maxwell,	R. P. Maxwell,	Sapperton, North,	Kilwatermoy,
174	Ditto,	Ditto,	J. Mangan,	Duke of Devonshire,	Ballinvella,	Lismore,
175	Ditto,	Ditto,	J. Leahy,	Ditto,	Monatrim,	Ditto,
176	Ardmore Bay,	Bag-Net,	T. Geary,	E. O'Dell,	Duffcarrick,	Ardmore,
177	Ditto,	Ditto,	Ditto,	Ditto,	Dysert,	Ditto,
178	Castlemaine Harbour,	Stake-Net,	H. W. Dodd & others,	The M'Gillycuddy,	Killenagh,	Ballinvoher,
179	Ditto,	Ditto,	F. Ashe,	Reps. Lord Ventry,	Lack,	Ditto,
180	Ditto,	Ditto,	H. W. Dodd & others,	E. Mahony,	Doogha,	Killorglin,
181	Ditto,	Ditto,	Ditto,	Ditto,	Illanustook,	Ditto,
182	Ditto,	Ditto,	E. De Moleyns,	Reps. Lord Ventry,	Cromane, Lower,	Ditto,
183	Ditto,	Ditto,	Sir R. Blennerhassett,	Sir R. Blennerhassett,	Douglas,	Ditto,
184	Ballinskelligs Bay,	Bag-Net,	W. Hector,	E. Reeves,	Dungangan,	Prior,
185	Kenmare River,	Ditto,	M. O'Sullivan,	E. B. Hartopp,	Rath,	Kilcrohane,
186	Sea off Coast of co. Louth,	Ditto,	T. A. Newcomen,	Smith Barry,	Glaspistol,	Clogher,
187	Ditto,	Ditto,	Arthur and Jane Newcomen,	Arthur Newcomen,	Callystown,	Ditto,
188	Ditto,	Ditto,	T. Kirk,	A. Godley,	Clogher,	Ditto,
189	Ditto,	Ditto,	Jane S. Newcomen,	Arthur Newcomen,	Callystown,	Ditto,
190	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,
191	Ditto,	Ditto,	E. Jones,	Sir A. Bellingham,	Dunany,	Dunany,
192	Ditto,	Ditto,	John Jones,	Ditto,	Drahanstown,	Ditto,
193	Ditto,	Ditto,	T. Kirk,	A. Godley,	Clogher,	Clogher,
194	Ditto,	Head Weir,	J. M'Keon,	Sir A. Bellingham,	Castlebellingham,	Gernonstown,
195	Sea off Coast of co. Antrim,	Bag-Net,	Charles Black,	Lord Antrim,	Portrush,	Dunluce,
196	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,
197	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,
198	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,
199	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,
200	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,
201	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,
202	Ditto,	Ditto,	John Reaney,	Ditto,	Torr,	Culleightrin,
203	Ditto,	Ditto,	N. D. Crommellin,	Ditto,	Ballyteerim,	Ditto,
204	Ditto,	Ditto,	A. M'Keegan,	Ditto,	Glebe,	Layd,
205	Ditto,	Ditto,	Lord Antrim,	Ditto,	Carnlough,	Ardclinia,
206	Ditto,	Ditto,	Ditto,	Ditto,	Townparks, Glenarm,	Tickmacrevan,
207	Ditto,	Ditto,	J. M'Intosh,	H. H. M'Neile,	Redbay,	Layd,
208	Ditto,	Ditto,	A. M'Keegan,	Charles Black,	Moneyvert,	Ditto,

Legality or Illegality of Fixed Nets erected or used for catching Salmon in Ireland—*continued.*APPENDIX,
No. 8.

No.	Barony.	County.	Judgment of Commissioners.	Date of Judgment.	Whether Judgment of Commissioners Appealed against.	Result of Appeal in Court of Queen's Bench.
132	Imokilly,	Cork,	To be abated, being within three miles of mouth of Womagh River.	8 Aug. 1864,	No appeal.	—
133	Ditto,	Ditto,	Postponed.	—	—	—
134	Ditto,	Ditto,	Legally erected,	29 June 1865,	No appeal.	—
135	Decies-with-in-Drum.	Waterford,	To be abated, as injurious to navigation,	12 Aug. 1864,	Ditto.	—
136	Ditto,	Ditto,	Ditto, by consent,	Ditto,	Ditto.	—
137	Ditto,	Ditto,	Ditto, ditto,	Ditto,	Ditto.	—
138	Ditto,	Ditto,	Ditto, ditto,	Ditto,	Ditto.	—
139	Ditto,	Ditto,	Ditto, ditto,	Ditto,	Ditto.	—
140	Ditto,	Ditto,	Ditto, ditto,	Ditto,	Ditto.	—
141	Ditto,	Ditto,	Ditto, ditto,	Ditto,	Ditto.	—
142	Decies-with-out-Drum.	Ditto,	Ditto, ditto,	Ditto,	Ditto.	—
143	Cashmore & Coshbride.	Ditto,	Ditto, ditto,	13 Aug. 1864,	Ditto.	—
144	Ditto,	Ditto,	To be abated, as injurious to navigation,	15 Aug. 1864,	Ditto.	—
145	Ditto,	Ditto,	Ditto,	16 Aug. 1864,	Ditto.	—
146	Decies-with-in-Drum.	Ditto,	To be abated, as erected without the title required by 5 & 6 Vic., c. 106.	Ditto,	Ditto.	—
147	Cashmore & Coshbride.	Ditto,	To be abated, as injurious to navigation,	Ditto,	Ditto.	—
148	Decies-with-in-Drum.	Ditto,	To be abated by consent of Lord Huntingdon,	Ditto,	Ditto.	—
149	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
150	Cashmore & Coshbride.	Ditto,	To be abated, as injurious to navigation,	Ditto,	Ditto.	—
151	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
152	Ditto,	Ditto,	To be abated by consent,	Ditto,	Ditto.	—
153	Decies-with-in-Drum.	Ditto,	To be abated, as injurious to navigation,	17 Aug. 1864,	Ditto.	—
154	Ditto,	Ditto,	To be abated, as erected without the title required by 5 & 6 Vic., c. 106.	Ditto,	Appeal,	Sent back.—See 273.
155	Ditto,	Ditto,	To be abated so far as it extends beyond low-water-mark; legally erected as regards the rest.	Ditto,	Ditto,	Judgment affirmed.—See 275.
156	Decies-with-in-Drum.	Ditto,	To be abated, as erected without the title required by 5 & 6 Vic., c. 106.	Ditto,	No appeal.	—
157	Cashmore & Coshbride.	Ditto,	Ditto,	Ditto,	Ditto.	—
158	Decies-with-in-Drum.	Ditto,	Ditto,	Ditto,	Ditto.	—
159	Ditto,	Ditto,	Ditto,	Ditto,	Appeal,	Sent back.—See 274.
160	Ditto,	Ditto,	Ditto,	Ditto,	No appeal.	—
161	Cashmore & Coshbride.	Ditto,	To be abated not erected in 1862,	Ditto,	Ditto.	—
162	Ditto,	Ditto,	To be abated, as injurious to navigation,	Ditto,	Ditto.	—
163	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
164	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
165	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
166	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
167	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
168	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
169	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
170	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
171	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
172	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
173	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
174	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
175	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
176	Decies-with-in-Drum.	Ditto,	To be abated, as erected without the title required by 5 & 6 Vic., c. 106.	Ditto,	Ditto.	—
177	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
178	Corkaguiny,	Kerry,	Ditto,	22 Aug. 1864,	Ditto.	—
179	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
180	Iveragh,	Ditto,	Ditto,	Ditto,	Ditto.	—
181	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
182	Ditto,	Ditto,	Ditto,	23 Aug. 1864,	Appeal,	Appeal withdrawn.
183	Ditto,	Ditto,	To be abated; not erected in 1862,	Ditto,	No appeal.	—
184	Ditto,	Ditto,	To be abated, within three miles of mouth of Inny River.	Ditto,	Ditto.	—
185	Dunkerron, S.	Ditto,	Legally erected,	Ditto,	Ditto.	—
186	Ferrard,	Louth,	To be abated, as erected without the title required by 5 & 6 Vic., c. 106.	26 Aug. 1864,	Ditto.	—
187	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
188	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
189	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
190	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
191	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
192	Ditto,	Ditto,	Legally erected,	Ditto,	Ditto.	—
193	Ditto,	Ditto,	To be abated, as erected without the title required by 5 & 6 Vic., c. 106.	27 Aug. 1864,	Ditto.	—
194	Ditto,	Ditto,	Legally erected,	Ditto,	Ditto.	—
195	Lr. Dunluce,	Antrim,	Ditto,	29 Aug. 1864,	Ditto.	—
196	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
197	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
198	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
199	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
200	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
201	Ditto,	Ditto,	To be abated; injurious to navigation,	Ditto,	Ditto.	—
202	Carey,	Ditto,	Legally erected,	30 Aug. 1864,	Ditto.	—
203	Ditto,	Ditto,	To be abated; within 3 miles of mouth of Cushendun River.	Ditto,	Ditto.	—
204	Lr. Glenarm,	Ditto,	Ditto,	Ditto,	Ditto.	—
205	Ditto,	Ditto,	Ditto, ditto Glenarm River,	Ditto,	Appeal,	Judgment reversed.
206	Ditto,	Ditto,	Ditto; in Estuary of Glenarm River,	Ditto,	Ditto,	Judgment affirmed.
207	Ditto,	Ditto,	Ditto; within 3 miles of mouths of Cushendall and Glenarriffe Rivers.	Ditto,	No appeal.	—
208	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—

APPENDIX TO THE REPORT OF THE

APPENDIX,
No. 8.

RESULT OF INQUIRIES held by the SPECIAL COMMISSIONERS OF IRISH FISHERIES into the

No.	Where Fixed Net situated.	Description of Fixed Net.	Name of Person maintaining and using Fixed Net.	Name of Owner of Fixed Net, or of Land to which Net attached.	Name of Townland to which Net attached.	Parish.
209	Sea off coast of co. Antrim,	Bag-Net,	Thomas Tait,	A. Boyd,	Ballycastle,	Ramoon,
210	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,
211	Ditto,	Ditto,	J. M'Gildowney,	J. M'Gildowney,	Clarepark,	Ditto,
212	Ditto,	Ditto,	A. M'Quilkin,	J. K. Tenant,	Cragganboy,	Ditto,
213	Ditto,	Ditto,	S. Woodside,	Ditto,	Ditto,	Ditto,
214	Ditto,	Ditto,	H. Dickson,	G. E. Fullerton,	Carrick-a-rode Island,	Ballintoy,
215	Ditto,	Ditto,	H. Kelly,	Ditto,	Larrybane,	Ditto,
216	Ditto,	Ditto,	R. Stewart,	Sir E. M'Naghten,	Portbradden,	Ditto,
217	Ditto,	Ditto,	Ditto,	J. E. Leslie,	Templastragh,	Ditto,
218	Ditto,	Ditto,	J. M'Alister,	E. M'Neile,	Carryaherkin,	Ditto,
219	Ditto,	Ditto,	F. Mills,	J. C. Anderson,	Portmoon - Feigh Mountain,	Dunseverick,
220	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,
221	Ditto,	Ditto,	W. Gregg,	Sir E. M'Naghten,	Ardihannon,	Billy,
222	Ditto,	Ditto,	Ditto,	Ditto,	Bushfoot,	Dunlao,
223	Sea off Coast of co. Londonderry,	Ditto,	H. O'Neill,	A. Sheldham and Hon. Mrs. Campbell,	East Ballygoelagh,	Ballyaghra,
224	Ditto,	Ditto,	J. M'Keenan,	Sir H. H. Bruce,	Freehall,	Dunbagh,
225	Sea off coast of co. Donegal,	Ditto,	C. M'Kinney,	Rev. S. Montgomery,	Glenagivney,	Lower Moville,
226	Ditto,	Ditto,	Ditto,	J. S. Nicholson,	Mossy Glen,	Ditto,
227	Ditto,	Ditto,	Ditto,	Anne Kean,	Ballynagaragh,	Ditto,
228	Ditto,	Ditto,	Ditto,	E. M'Clolland,	Ballycherry,	Ditto,
229	Ditto,	Ditto,	B. Sheffry,	J. S. Nicholson,	Turmacronagh,	Culdaff,
230	Ditto,	Ditto,	A. Maddison,	R. C. Stewart,	Horn Head,	Clondahorky,
231	Sea off Coast of co. Londonderry,	Ditto,	R. Stewart,	Sir H. H. Bruce,	Ballymaclary,	Magilligan,
232	Ditto,	Ditto,	Ditto,	Ditto,	Doughs,	Ditto,
233	Lough Foyle,	Stake-Net,	R. Allen,	Irish Society,	Gransha,	Glendermott,
234	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,
235	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,
236	Ditto,	Ditto,	Ditto,	Ditto,	Ballynashallogh,	Templemore,
237	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,
238	Ditto,	Ditto,	Ditto,	Ditto,	Culmore,	Ditto,
239	Ditto,	Ditto,	Ditto,	Ditto,	Culmore Level,	Ditto,
240	Ditto,	Ditto,	Ditto,	Ditto,	Lower Campsey,	Faghna vale,
241	Ditto,	Ditto,	Ditto,	Ditto,	Coolkeeragh,	Glendermott,
242	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,
243	Ditto,	Ditto,	Ditto,	Ditto,	Culmore,	Culmore,
244	River Erne,	Ditto,	Alicia Sheil,	Thomas Connolly,	Fenner,	Inismacsaint,
245	Sea off Coast of co. Sligo,	Bag-Net,	William Petrie,	Ormsby Jones,	Streedagh,	Ahamlish,
246	Ditto,	Ditto,	William Little,	K. Orme,	Carrowhubback,	Kilgiam,
247	Sea off Coast of co. Mayo,	Ditto,	M. Flynn,	Colonel Knox,	Castletown or Lackan,	Lackan,
248	Ditto,	Ditto,	William Little,	Rev. J. M'Naughten,	Ballinlena,	Kilcummin,
249	Ditto,	Ditto,	Ditto,	Rev. C. L. Thomas,	Ballygarry,	Ditto,
250	Shannon River,	Stake-Net,	H. S. O'Brien,	H. S. O'Brien,	Portdriue,	Kilfinnian,
251	Bantry Bay, Glengariffe Har.,	Bag-Net,	Lord Bantry,	Lord Bantry,	Moonteenusduder,	Kilcaskin,
252	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,
253	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,
254	Bantry Bay, Adrigole Harbour,	Ditto,	Ditto,	Ditto,	Adrigole,	Ditto,
255	Sea off co. Mayo,	Ditto,	Alexander Hector,	William Pike,	Achillbeg,	Achill,
256	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,
257	Sea off Achill Island,	Ditto,	Ditto,	M. M. Blacker,	Keem Net,	Ditto,
258	Ditto,	Ditto,	Ditto,	C. Baycott,	Gupraheen,	Achill,
259	Ditto,	Ditto,	Ditto,	Ditto,	West Net,	Ditto,
260	Ditto,	Ditto,	Ditto,	Trustees Achill Mission,	Keel,	Ditto,
261	Waterford Harbour,	Stake-Net,	A. N. O'Neill,	A. N. O'Neill,	Woodstown,	Crooke,
262	Ditto,	Ditto,	Ditto,	Ditto,	Knockaveeliah,	Ditto,
263	River Suir, King's Channel,	Ditto,	A. N. O'Neill and Mary O'Neill,	A. N. O'Neill and Mary O'Neill,	Knockboy,	Ballygowan,
264	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,
265	River Shannon,	Ditto,	Jn. Jameson & others,	Knight of Glin,	Caheragh,	Kilfergus,
266	Ditto,	Ditto,	R. W. C. Reeves,	R. W. C. Reeves,	Burrane, Lower,	Killimer,
267	Lower Bunratty,	Head Weir,	Thomas Studdart,	Thomas Studdart,	Bunratty,	Bunratty,
268	Sea off the Coast of co. Sligo,	Bag-Net,	William Petrie,	Lady Palmerston and Hon. W. Cowper.	Mulaghmore,	Ahamlish,
269	Killala Bay,	Ditto,	William Little,	R. Orme,	Carrowhubback,	Kilgiam,
270	Sea off Coast of co. Sligo,	Ditto,	William Petrie,	O. Jones,	Streedagh,	Ahamlish,
271	Sea off Coast of co. Londonderry,	Ditto,	Sir H. Bruce,	Sir H. Bruce,	Ballymaclary,	Magilligan,
272	Sea off co. Sligo,	Ditto,	Lady Palmerston and Hon. W. Cowper.	—	Mulaghmore,	Ahamlish,
273	River Blackwater,	Stake-Net,	E. M'Sweeney,	—	Stael,	Templemichael,
274	Ditto,	Ditto,	William Collins,	J. Hargrave,	Dromore,	Agliah,
275	Ditto,	Ditto,	John Neil and W. Hennessey,	Rev. G. Gumbleton,	Scart,	Kilcockan,
276	River Barrow, otherwise Nore and Barrow conjoined.	Head Weir,	M. W. Knox,	M. W. Knox,	Kilmannock,	Kilmoken,
277	Sea off co. Donegal,	Bag-Net,	George Young,	—	Carthage,	Culdaff,
278	Shannon,	Stake-Net,	Daniel Moloney,	Lord Annaly,	Lakyle, North,	Kilofin,
279	Ditto,	Ditto,	Synan M'Auliffe,	Thomas Rice Henn,	Slievadooley,	Ditto,
280	Ditto,	Ditto,	R. W. C. Reeves,	R. W. C. Reeves,	Burrane, Lower,	Killimer,
281	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,
282	Ditto,	Ditto,	Robert Leslie,	Robert Leslie,	Tarbert,	Kilnaghten,
283	Ditto,	Ditto,	William Sandes,	William Sandes,	Ralappane,	Ditto,
284	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,

INSPECTORS OF IRISH FISHERIES.

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Legality or Illegality of Fixed Nets erected or used for catching Salmon in Ireland—continued.

APPENDIX,
No. 8.

No.	Barony.	County.	Judgment of Commissioners.	Date of Judgment.	Whether Judgment of Commissioners Appealed against.	Result of Appeal in Court of Queen's Bench.
209	Carey,	Antrim,	To be abated; within 3 miles of Ballycastle River,	30 Aug. 1864,	No appeal.	—
210	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
211	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
212	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
213	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
214	Ditto,	Ditto,	Legally erected,	Ditto,	Ditto.	—
215	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
216	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
217	Ditto,	Ditto,	To be abated, as erected without the title required by 5 & 6 Vic., c. 106.	Ditto,	Ditto.	—
218	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
219	Ditto,	Ditto,	Legally erected,	Ditto,	Ditto.	—
220	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
221	Ditto,	Ditto,	To be abated; within Estuary of Bush River,	Ditto,	Appeal,	Judgment affirmed.
222	Lr. Dunluce,	Ditto,	Ditto,	Ditto,	Ditto.	Ditto.
223	Coleraine,	Londonderry,	Legally erected,	31 Aug. 1864,	No Appeal.	—
224	Ditto,	Ditto,	To be abated; within three miles of mouth of Bann River.	Ditto,	Ditto.	—
225	Inishowen,	Donegal,	To be abated, as erected without the title required by 5 & 6 Vic., c. 106.	3 Sept. 1864,	Ditto.	—
226	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
227	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
228	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
229	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
230	Kilmacrennan,	Ditto,	Ditto,	Ditto,	Ditto.	—
231	Keenaght,	Londonderry,	Ditto,	5 Sept. 1864,	Appeal,	Sent back on motion before hearing of appeal, to enable the owner to make a case abandoned at first trial.—See No. 271.
232	Ditto,	Ditto,	To be abated; within Estuary of Foyle River,	Ditto,	No Appeal.	—
233	Tirkeeran,	Ditto,	Legally erected,	—	Ditto.	—
234	Ditto,	Ditto,	Ditto,	—	Ditto.	—
235	Ditto,	Ditto,	Ditto,	—	Ditto.	—
236	City & Liberties,	Ditto,	To be abated; injurious to navigation,	—	Ditto.	—
237	Ditto,	Ditto,	Ditto,	—	Ditto.	—
238	Ditto,	Ditto,	Ditto,	—	Ditto.	—
239	Ditto,	Ditto,	Ditto,	—	Ditto.	—
240	Tirkeeran,	Ditto,	Ditto,	—	Ditto.	—
241	Ditto,	Ditto,	Ditto,	—	Ditto.	—
242	Ditto,	Ditto,	Ditto,	—	Ditto.	—
243	Ditto,	Ditto,	Ditto,	—	Ditto.	—
244	Tyrhugh,	Donegal,	Legally erected,	8 Sept. 1864,	Ditto.	—
245	Carbury,	Sligo,	See No. 270.	—	—	—
246	Tireragh,	Ditto,	To be abated, as erected without the title required by 5 & 6 Vic., c. 106.	10 Sept. 1864,	Appeal,	Sent back in consequence of the evidence at first trial being defective.—See No. 269.
247	Tyrawley,	Mayo,	Ditto,	12 Sept. 1864,	No Appeal.	—
248	Ditto,	Ditto,	Ditto,	Ditto,	Appeal,	Judgment reversed.
249	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	Judgment affirmed.
250	Lr. Bunratty	Clare,	To be abated, as injurious to navigation and public rights of fishing, and as erected on the site of a weir previously condemned. <i>Vide</i> sec. 17 of 13 & 14 Vic., c. 88.	17 Sept. 1864,	Ditto,	Ditto.
251	Bere,	Cork,	To be abated; within Estuary of River,	8 May, 1867.	—	—
252	Ditto,	Ditto,	Ditto,	Ditto,	—	—
253	Ditto,	Ditto,	Ditto,	Ditto,	—	—
254	Ditto,	Ditto,	Abandoned,	Ditto,	—	—
255	Burishoole,	Mayo,	To be abated, as erected without the title required by 5 & 6 Vic., c. 106.	12 July, 1865,	No Appeal.	—
256	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
257	Ditto,	Ditto,	Postponed for further evidence,	Ditto,	Ditto.	—
258	Ditto,	Ditto,	To be abated, as erected without the title required by 5 & 6 Vic., c. 106.	Ditto,	Ditto.	—
259	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	—
260	Ditto,	Ditto,	Legally erected,	Ditto,	Ditto.	—
261	Gualtiere,	Waterford,	(See 75 to 78 inclusive.) Report made to Court of second trial.	No Judgment,	Set down on report,	Judgment reversed.
262	Ditto,	Ditto,		Ditto,	Ditto,	
263	Ditto,	Ditto,		Ditto,	Ditto,	
264	Ditto,	Ditto,		Ditto,	Ditto,	
265	Shanid,	Limerick,	Report made to Court,	Ditto,	Ditto,	Ditto.
266	Clonderalaw,	Clare,	Ditto,	Ditto,	Ditto,	Ditto.
267	Lr. Bunratty,	Ditto,	Legally erected,	10 Nov. 1866,	No appeal.	—
268	Carbury,	Sligo,	Ditto,	14 Nov. 1866,	Ditto.	—
269	Tireragh,	Ditto,	Report made to Court,	—	Appeal pending.	—
270	Carbury,	Ditto,	Legally erected,	14 Nov. 1866,	No appeal.	—
271	Keenaght,	Londonderry,	Report made to Court,	20 Nov. 1866,	Set down on report,	Judgment reversed.
272	Carbury,	Sligo,	Illegal. Within 3 miles of mouth of Duff River,	15 June, 1867,	Appeal,	Judgment affirmed.
273	Decies-within-Drum.	Waterford,	Report made to Court,	No Judgment,	Appeal,	Judgment reversed.
274	Ditto,	Ditto,	Ditto,	Ditto,	Ditto,	Appeal withdrawn.
275	Ditto,	Ditto,	Legal,	4 Jan. 1868,	No appeal.	—
276	Shalburne,	Wexford,	Report to Court—That it is injurious to navigation—25th February, 1868.	No Judgment,	Set down on report,	Judgment affirmed.
277	Innishowen,	Donegal,	Legal,	6 Mar. 1868,	No appeal.	—
278	Clonderalaw,	Clare,	To be abated,	12 Nov. 1868,	Appeal,	Judgment reversed.
279	Ditto,	Ditto,	Ditto,	Ditto,	No Appeal.	—
280	Ditto,	Ditto,	Ditto,	Ditto,	Appeal,	Judgment reversed.
281	Ditto,	Ditto,	Ditto,	Ditto,	Ditto.	Ditto.
282	Iraghtionnor,	Kerry,	—	17 Nov. 1868,	—	—
283	Ditto,	Ditto,	To be abated,	Ditto,	—	—
284	Ditto,	Ditto,	Given up by Mr. Nelligan. Not erected or used either as Bag or Stake Net in 1862.	Ditto,	—	—

No.	Where Fixed Net situated.	Description of Fixed Net.	Name of Person maintaining and using Fixed Net.	Name of Owner of Fixed Net, or of Land to which Net attached.	Name of Townland to which Net attached.	Parish.
285	Sea off Coast co. Antrim,	Fixed Draft Net	Denis Black,	Denis Black,	Moneyvart,	Layd,
286	Ditto,	Ditto,	Archibald M'Keegan,	Earl of Antrim,	Glebe,	Layd,
287	Sea off Coast co. Cork,	Stake-Net,	Sampson French,	Sampson French,	Cuskinney,	Templerobin,
288	Coomhola River (estuary),	Fixed Draft,	R. Vickery,	Earl of Bantry,	Dromkeal,	Kilmackmege,
289	Ditto,	Ditto,	R. Warner,	Ditto,	Reenadesert,	Ditto,
290	Ouvane River,	Ditto,	William Sullivan,	Ditto,	Ditto,	Ditto,
291	Sea off Coast co. Cork,	Ditto,	Michael Murphy,	Ditto,	Reendonegan,	Kilmaccolgan,
292	Donemark River (estuary),	Ditto,	Ditto,	—	Gurteenroe and Newtown,	Ditto,
293	Shannon,	Stake-Net,	Thomas Sandes,	Thomas Sandes,	Coolnacoonagh,	Kilnaughten,
294	Sea off Coast co. Antrim,	Fixed Draft Net	Sir H. H. Boyd,	Sir H. H. Boyd,	Townparks,	Ramoan,
295	Ditto,	Ditto,	Archibald M'Keegan,	Earl of Antrim,	Glebe,	Layd,
296	Ditto,	Ditto,	John Finlay,	John Finlay,	Ballyteerim,	Culleightrin,
297	Ditto,	Ditto,	Henry H. M'Neill,	H. H. M'Neill,	Redbay,	Layd,
298	Ditto,	Ditto,	Edmund M'Neill,	Edmund M'Neill,	Carryshe-kin,	Ballintoy,
299	Ditto,	Ditto,	Denis Black,	Denis Black,	Moneyvart,	Layd,
300	Ditto,	Ditto,	John M'Gildowny,	John M'Gildowny,	Clare,	Ramoan,
301	Ditto,	—	Robert Stewart,	James Leslie,	Templastragh,	Ballintoy,
302	Ditto,	Fixed Draft Net	Sir H. H. Boyd,	Sir Hugh Boyd, bart.,	Gregganboy,	Ditto,
303	Sea off Coast co. Londonderry,	Ditto,	John Cromie,	John Cromie,	North Mullaghacall,	Ballyaghran,
304	Ditto,	—	Henry O'Neill,	Arnold White and John P. Broughton.	East and West Tullaghmurray and Crossreagh.	Ditto,
305	Ditto,	Fixed Draft Net	Sir H. H. Bruce, bt.,	Sir H. Harvey Bruce, bt.,	Ballymaclary,	Tamaghtard,
306	Estuary of Inver River,	2 Ditto,	William Sinclair,	William Sinclair,	Inver Estuary,	Inver,
307	Eake River,	Fixed Draft Net	Earl of Arran,	Earl of Arran,	Eake River,	Donegal, and Inver,
308	Sea off Coast co. Donegal,	Ditto,	Marquis Conyngham,	Marquis Conyngham,	Ballyederlan,	Killaghtee,
309	Ditto,	Bag-Net,	Ditto,	Ditto,	Ditto,	Ditto,
310	Estuary of Leannan River,	2 Fixed Draft Nets.	E. Kelly,	Sir Jas. Stewart, bt.,	Leannan River,	Aughniah,
311	Sea off Coast co. Donegal,	Fixed Draft Net	W. R. Tredennick,	W. R. Tredennick,	Killulton,	Killaghtee,
312	Ditto,	Ditto,	Ditto,	Ditto,	Ballycrov,	Ditto,
313	Ditto,	Ditto,	S. Sheil,	S. Sheil,	Magheracar,	Innishmacsaint,
314	Ditto,	Ditto,	Mrs. S. M'Donnell,	Mrs. S. M'Donnell,	Ballymagart,	Killaghtee,
315	Ditto,	Ditto,	A. Hamilton,	A. Hamilton,	Coolmore,	Kilbarra,
316	Ditto,	Ditto,	Murray Stewart,	Murray Stewart,	Gortalia,	Kilcar,
317	Ditto,	Ditto,	Ditto,	Ditto,	Mucroa,	Ditto,
318	Ditto,	Ditto,	Ebenezer Bustard,	Ebenezer Bustard,	Drumanoo,	Killybegs,
319	Ditto,	Ditto,	James Hawkins,	—	Ballybodenell, &c.,	Killaghtee,
320	River Moy,	6 Ditto,	Mary Anne Little and Andrew Clarke.	Mary Anne Little and A. Clarke.	—	—
321	Ditto,	5 Ditto,	William Petrie,	John Wingfield Stratford.	Scurramore,	Castleconnor,
322	Sea off Coast of Sligo,	Fixed Draft Net	J. Carnegie,	Richard G. Brinkley,	Sraheens,	Easky,
323	River Owenmore,	3 Ditto,	William Petrie,	—	—	—
324	Tullaghan Bay,	7 Fixed Drafts,	Helen Little,	—	Tullaghan Bay,	Kilmore, &c.,
325	Blackwater,	Stake-Weir,	Hon. C. Wm. Moore-Smyth.	Hon. C. Wm. Moore-Smyth.	Ballynatray,	Templemichael,
326	Shannon,	Ditto,	Capt. R. Leslie,	Capt. R. Leslie,	Tarbert,	Kilnaughten,
327	Ditto,	Ditto,	Ditto,	Ditto,	Kilpadogue,	Ditto,
328	Ditto,	Ditto,	Thomas Sandes,	Thomas Sandes,	Rallapane,	Ditto,
329	Sea off Coast co. Sligo,	Fixed Draft Net	James Hale,	James Hale,	Killeenduff,	Easky,
330	Sligo River,	2 Ditto,	William Petrie,	Captain Martin,	Ballinacra and Carron,	Kilmore,
331	Erne River,	3 Ditto,	Ballyshannon Fishery Company.	—	Carrickboy and Townparks.	Kilbanna and Innismacaint,
332	Teelin Estuary,	2 Ditto,	Mrs. Anne Hamilton,	Mrs. Anne Hamilton,	Kilcar and Glencolumbkil.	Glencolumbkil and Kilcar.
333	Sea off Coast co. Donegal,	Fixed Draft Net	Charles Stewart,	Charles Stewart,	Laytreany,	Clondaharty,
334	Sea off Coast co. Londonderry,	Ditto,	C. M'Kinney,	Mary Ross and E. Deane,	Doaghs,	Magilligan,
335	Ditto,	Ditto,	J. M'Gowney,	—	Lower and Middle Doaghs,	Ditto,
336	Ditto,	Ditto,	William Lorton,	William Lorton,	Ditto,	Ditto,
337	River Foyle,	Ditto,	The Irish Society,	The Irish Society,	Claughboy, Montgavillen, Ballydonagh, Glenfad, Porthall, Culmore and Coolkeeragh.	Donaghey, Taughboyne, Leckpatrick, Clonleigh, Templemore, and Glandermott,
338	Ditto,	2 Ditto,	Ditto,	Ditto,	Campaie & Coolattee,	Cappagh and Clonleigh.
339	River Bann,	4 Ditto,	Ditto,	Ditto,	Cranagh & Ballyaghran,	—
340	Sea off Coast co. Derry,	Fixed Draft Net	Earl of Antrim,	Earl of Antrim,	Portrush,	Ballywillin,
341	River Blackwater,	Stake-Weir,	Hon. C. W. Moore Smyth.	Hon. C. W. Moore Smyth.	Ballynatray,	Templemichael,
342	Sea off Coast co. Antrim,	Ditto,	R. Hector,	Sir H. H. Boyd,	Ballycastle, Townparks, Portbrittas.	Ramoan,
343	Ditto,	Ditto,	Denis Black,	Denis Black,	Moneyvart,	Layd,
344	Shannon,	Stake-Net,	Stephen Colles,	Stephen Colles,	Lower Kilcolgan,	Kilnaughten,
345	Ditto,	2 Fly Nets,	Lord Annally,	Lord Annally,	Lakyle, North,	Kilofin,
346	Ditto,	Stake-Net,	Colonel Vandeleur,	Colonel Vandeleur,	Ballynote, West,	Kilrush,
347	Ditto,	Ditto,	Ditto,	Ditto,	Carrodottia, South,	Kilimer,
348	Ditto,	Ditto,	Ditto,	Ditto,	Colemanstown,	Kilofin,
349	Ditto,	Ditto,	Ditto,	Ditto,	Lakyle, South,	Ditto,
350	Ditto,	Ditto,	Ditto,	Ditto,	Carrodottia, West,	Kilimor,
351	Ditto,	Ditto,	R. H. Borough,	R. H. Borough,	Querina,	Kilofin,
352	Ditto,	Ditto,	R. W. C. Reeves,	R. W. C. Reeves,	Poulmadaree,	Kilimor,
353	Ditto,	Ditto,	B. Cox,	B. Cox,	Clarefield,	Moyarta,
354	Ditto,	Ditto,	N. S. O'Gorman,	N. S. O'Gorman,	Ballynote, West,	Kilrush,

or Illegality of Fixed Nets erected or used for catching Salmon in Ireland—*continued.*APPENDIX,
No. 8.

No.	Barony.	County.	Judgment of Inspectors.	Date of Judgment.	Whether Judgment of Inspectors Appealed against.	Result of Appeal in Court of Queen's Bench.
285	Lr. Glenarm,	Antrim,	See No. 299.	—	—	—
286	Ditto,	Ditto,	See No. 295.	—	—	—
287	Imokilly,	Cork,	Legal,	16 Feb. 1870.	—	—
288	Bantry,	Ditto,	Illegal, as erected without the title required by 5 & 6 Vic., c. 106.	21 Feb. "	—	—
289	Ditto,	Ditto,	Ditto,	Ditto.	—	—
290	Ditto,	Ditto,	Ditto,	Ditto.	—	—
291	Ditto,	Ditto,	Withdrawn,	Ditto.	—	—
292	Ditto,	Ditto,	Ditto,	Ditto.	—	—
293	Iraghticonnor,	Kerry,	Legal,	11 Mar. "	—	—
294	Cary,	Antrim,	Ditto,	10 May, "	—	—
295	Lr. Glenarm,	Ditto,	Ditto,	10 May, "	—	—
296	Cary,	Ditto,	Ditto,	Ditto.	—	—
297	Lr. Glenarm,	Ditto,	Ditto,	Ditto.	—	—
298	Cary,	Ditto,	Ditto,	Ditto.	—	—
299	Lr. Glenarm,	Ditto,	Ditto,	Ditto.	—	—
300	Cary,	Ditto,	Ditto,	Ditto.	—	—
301	Ditto,	Ditto,	Ditto,	Ditto.	—	—
302	Ditto,	Ditto,	Ditto,	Ditto.	—	—
303	N.E. Liberties of Coleraine.	Londonderry,	Ditto,	11 May, "	—	—
304	Ditto,	Ditto,	Ditto,	Ditto.	—	—
305	Kenaght,	Ditto,	Ditto,	Ditto.	—	—
306	Banagh,	Donegal,	Ditto,	13 May, "	—	—
307	Ditto,	Ditto,	Withdrawn,	Ditto.	—	—
308	Ditto,	Ditto,	Legal,	Ditto.	—	—
309	Ditto,	Ditto,	Illegal. Injurious to navigation,	Ditto.	—	—
310	Kilmacrennan,	Ditto,	Legal,	Ditto.	—	—
311	Banagh,	Ditto,	Withdrawn,	Ditto.	—	—
312	Ditto,	Ditto,	Ditto,	Ditto.	—	—
313	Tirhugh,	Ditto,	Illegal, as not having the title required by 5 & 6 Vic., c. 106.	Ditto.	—	—
314	Banagh,	Ditto,	Ditto,	Ditto.	—	—
315	Tirhugh,	Ditto,	Ditto,	Ditto.	—	—
316	Banagh,	Ditto,	Legal,	Ditto.	—	—
317	Ditto,	Ditto,	Ditto,	Ditto.	—	—
318	Ditto,	Ditto,	Ditto,	Ditto.	—	—
319	Ditto,	Ditto,	Illegal, as not having the title required by 5 & 6 Vic., c. 106.	Ditto.	—	—
320	—	Mayo and Sligo.	Legal,	17 May, "	Appeal.	—
321	Tireragh,	Sligo,	Ditto,	18 May, "	Ditto.	—
322	Ditto,	Ditto,	Withdrawn.	—	—	—
323	Erris,	Mayo,	Legal,	18 May, "	—	—
324	Ditto,	Ditto,	Ditto,	Ditto.	—	—
325	Coshmore & Coshbride.	Waterford,	No power to grant Certificate (see No. 341),	11 Jan. 1871.	Appeal.	Certificate ordered to be granted after first inquiry.
326	Iraghticonnor	Kerry,	Legal,	16 Jan. "	—	—
327	Ditto,	Ditto,	Ditto,	Ditto.	—	—
328	Ditto,	Ditto,	Ditto,	Ditto.	—	—
329	Tireragh,	Sligo,	Illegal, as not having the title required by 5 & 6 Vic., c. 106.	4 Feb. "	—	—
330	Erris,	Ditto,	Legal,	4 Feb. "	—	—
331	Tirhugh,	Donegal,	Ditto,	7 Feb. "	—	—
332	Banagh,	Ditto,	Illegal, as not having the title required by 5 & 6 Vic., c. 106.	Ditto.	—	—
333	Ditto,	Ditto,	Ditto,	Ditto.	—	—
334	Keenagh,	Londonderry,	Ditto,	14 Feb. "	Appeal.	Judgment Affirmed.
335	Ditto,	Ditto,	Legal,	Ditto.	—	—
336	Ditto,	Ditto,	Ditto,	Ditto.	—	—
337	Raphoe, Lower Liberties of Londonderry, and Tirkeeran.	Ditto,	Ditto,	15 Feb. "	—	—
338	Omagh, East, and Raphoe.	Londonderry and Donegal.	Illegal, not fished in 1862,	Ditto.	—	—
339	Lr. Dunluce,	Londonderry,	Legal,	Ditto.	—	—
340	Coshmore & Coshbride.	Ditto,	Ditto,	Ditto.	—	—
341	Carey,	Waterford,	Not injurious to navigation,	24 May, "	—	Certificate granted.
342	Carey,	Antrim,	Adjourned,	19 July, "	—	—
343	Lr. Glenarm,	Ditto,	Legal,	Ditto.	—	—
344	Kilcolgan, Lr. Clonderlaw,	Kerry,	Adjourned,	9 Nov. "	—	—
345	Moyarta,	Clare,	Legal,	10 Nov. "	—	—
346	Ditto,	Ditto,	Ditto,	Ditto.	—	—
347	Clonderlaw,	Ditto,	Ditto,	Ditto.	—	—
348	Ditto,	Ditto,	Ditto,	Ditto.	—	—
349	Ditto,	Ditto,	Withdrawn,	11 Nov. "	—	—
350	Ditto,	Ditto,	Ditto,	Ditto.	—	—
351	Ditto,	Ditto,	Withdrawn,	Ditto.	—	—
352	Ditto,	Ditto,	Legal,	Ditto.	—	—
353	Moyarta,	Ditto,	Ditto,	Ditto.	—	—
354	Ditto,	Ditto,	Illegal, not fished in 1862,	Ditto.	—	—

TABLE showing the CLOSE SEASONS for SALMON and TROUT in

No. and Name of District.	Boundary of District.	Tidal.
1. Dublin.	Skerries to Wicklow.	{ From Howth to Dalkey Island, between 31st July and 16th January. } For remainder of District, between 31st Aug. and 16th Feb.
2. Wexford.	{ Wicklow to Kiln Bay, East of Bannow Bay.	{ Between 15th September and 9th April.
3. Waterford,	Kiln Bay to Helvick Head.	" 31st August and 16th February.
4. Lismore,	Helvick Head to Ballycotton.	" 31st August and 16th February.
. Cork,	Ballycotton to Galley Head.	{ " 15th August and 16th February for Electoral Division A (between Ballycotton and Barry's Head). } " 31st August and 1st March, for Electoral Division B (between Barry's Head and Galley Head).
6 ¹ . Skibbereen,	Galley Head to Mizen Head.	" 15th September and 1st April.
6 ² . Bantry.	Mizen Head to Crow Head.	" Do. do.
6 ³ . Kenmare,	Crow Head to Lamb Head.	" Do. do.
7. Killarney,	{ Lamb Head to Dunmore Head, including Blaskets.	{ " 31st July and 16th January, save Rivers Maine, Ferta, or Valencia, Inny, and Waterville, and their Tributaries. } Maine, Ferta or Valencia, Inny, and Tributaries, 15th September to 1st May. Waterville and its Tributaries, 16th July and 1st January.
8. Limerick,	Dunmore to Hags Head.	{ Between 15th July and 1st February, save Rivers Cashen and Doonbeg. } Rivers between Kerry Head and Dunmore Head, 15th September and 1st April. For River Cashen and Tributaries, between 12th August and 20th May. For Doonbeg, 31st August and 1st June.
9. Galway,	Hags Head to Slyne Head.	Between 15th August and 1st February.
10 ¹ . Ballinakill,	Slyne Head to Pigeon Point.	" 31st August and 16th February.
10 ² . Bangor,	Pigeon Point to Benwee Head.	" Do. do.
11. Ballina,	Benwee to Coonamore,	{ " 12th August and 16th March, save Palmerston and Essey Rivers, between 31st August and 1st June.
12. Sligo,	Coonamore to Mullaghmore.	{ " 19th August and 4th February, save tidal parts of Sligo River, which are 15th July and 1st January.
13. Ballyshannon,	Mullaghmore to Rossan.	" 20th August and 1st March.
14. Letterkenny,	Rossan to Malin Head.	" 19th August and 4th Feb., and one mile above Tideway, save Lennane River between 15th July and 1st January.
15 ¹ . Londonderry,	Malin to Downhill Boundary.	" 31st August and 15th April.
15 ² . Coleraine,	Downhill Boundary to Portrush.	" 19th August and 4th February.
16. Ballycastle,	Portrush to Donaghadee.	" Do. do.
17 ¹ . Drogheda,	Skerries to Clogher Head.	" 19th August and 12th February.
17 ² . Dundalk,	Clogher Head to Donaghadee.	" 19th August and 1st April.

NOTE.—The 31st section of the 26th & 27th Vic., c. 114, requires there shall not be fewer than 168 days Close Season in each Fishery.
WEEKLY CLOSE SEASON.—By the 20th section of the 26th & 27th Vic., c. 114, no Salmon or Trout shall be fished for or taken in any way, except by Single Rod and Line, between six of the clock on Saturday morning and six of the clock on the succeeding Monday morning.

No. 9.

APPENDIX,
No. 9.

the different Districts in Ireland, up to 31st December, 1871.

Fresh Water.	Angling with Cross Lines.	Angling with Single Rod and Line.	Date of last change.	No. and Name of District.
From Howth to Dalkey Island, between 31st July and 1st Feb. For remainder of Dist. between 31st Aug. & 1st March.	15th October and 2nd April. 28th September and 16th March.	{ 1st Nov. to 1st Feb.	{ 10th Dec. 1861.	1. Dublin.
Between 15th September and 9th April.	30th September and 18th March.	{ 30th Sept. and 1st March.	{ 15th Feb. 1870.	2. Wexford.
" 31st August and 16th February.	31st August and 16th February.	{ 14th Sept. and 1st Feb.	{ 4th Nov. 1870.	3. Waterford.
" 31st August and 16th February.	31st August and 16th February.	{ 30th Sept. and 1st Feb.	{ 10th Dec. 1870.	4. Lismore.
" 15th Sept. and 1st April, for Electoral Division C.	9th October and 27th March.	{ 1st Nov. to 1st Feb.	20th June, 1868.	5. Cork.
Between 31st August and 1st April, for Electoral Division D.	15th October and 2nd April.		22nd June, 1859.	
Between 15th September and 1st April.	15th October and 2nd April.		7th Feb. 1856.	6. Skibbereen.
" Do. do.	Do. do.		"	6. Bantry.
" Do. do.	Do. do.		"	6. Kenmare.
Same as Tidal.	Same as Netting.	{ 30th Sept. and 1st Feb., save in Maine, Laune, Carra, and Tributaries.	{ 26th April, 1870.	7. Killarney.
Same as Tidal.	Same as Netting.	{ Maine and Tributaries, 20th Sept. and 1st March.		
Same as Tidal.	Same as Netting.	{ Laune, Carra, and Tributaries, 20th Sept. & 10th Jan.		
Between 31st July and 1st February, save Rivers Cashen and Doonbeg and their Tributaries. Rivers between Kerry Head and Dunmore Head, 15th September and 1st April.* For Cashen and Tributaries, between 12th August and 20th May. Doonbeg and Tributaries, 31st August and 1st June.	Same as Netting.	{ Between 20th Sept. and 1st Feb., save Cashen and Doonbeg Rivers. And for Rivers between Kerry Head and Dunmore Head, between 10th Sept. and 1st April. For Cashen and Doonbeg and Tributaries, 20th Sept. and 1st May.	{ 16th Dec. 1870.	8. Limerick.
Between 15th August and 1st February.	Same as Netting.	{ Between 15th Oct. and 1st Feb., save in Cashla and Doonulla Rivers, between 31st Oct. and 1st Feb.	{ 26th Dec. 1871.	9. Galway.
" 31st August and 1st March.	28th September and 16th March.	{ 1st Nov. to 1st Feb.	{ 14th July, 1849.	10. Ballinakill.
" Do. do.	Do. do.		"	10. Bangor.
" 31st July and 1st February, save Palmerston and Easkey Rivers, between 31st August and 1st June.	Same as Netting.	{ Between 15th Sept. and 1st Feb., Palmerston and Easkey Rivers, 20th Sept. and 1st June.	{ 19th Dec., 1870.	11. Ballina.
" 19th August and 4th February.	19th August and 4th February.	{ 20th Sept. and 1st Feb., save tidal parts of Sligo River between 3rd Sept. and 1st Jan., and in Drumcliffe River and Glenora Lake between 19th Oct. and 1st Feb.	{ 24th April, 1871.	12. Sligo.
" 20th August and 1st March.	20th August and 1st March.	{ Between 15th Oct. and 1st March, save Bunduff, Bundrowes, and Erne Rivers; Bunduff River, 20th Sept. and 1st Feb.; Bundrowes, 20th Sept. and 1st Jan., and Erne River, 20th Sept. and 1st March.	{ 24th Nov. 1871.	13. Ballyshannon.
" 19th August and 1st March, save Lennane River, between 15th July and 1st Jan.	28th September and 16th March; Lennane, 15th July and 1st Jan.	{ 1st Nov. and 1st Feb.	{ 2nd Sept. 1857. 24th Feb. 1871.	14. Letterkenny.
" 31st August and 15th April.	28th September and 15th April.	Do.	27th Jan. 1862.	15. Londonderry.
" 19th August and 1st March.	28th September and 16th March.†	{ 19th Oct. and 16th March.	{ 15th Dec. 1856. 31st Mar. 1871.	15. Coleraine.
" Do. do.	28th September and 16th March.	{ 1st Nov. and 1st Feb.	{ 15th Dec. 1856.	16. Ballycastle.
" 19th August and 12th February.	19th August and 12th February.	{ 15th Sept. and 1st Feb.	{ 26th Dec. 1871.	17. Drogheda.
" 19th August and 1st April.	28th September and 16th March.	{ 1st Nov. and 1st Feb.	{ 26th Dec. 1867.	17. Dundalk.

* Close Season for Fixed Engines for the capture of Eels, between the 10th January and 1st July, save in the River Shannon, which is between the 31st January and 1st July, and in all other rivers in the Limerick District between 31st December and 1st July in year following.

† Pello Fishing by Trammel Nets in Lough Neagh, between 31st October and 1st February.

APPENDIX TO THE REPORT OF THE

APPENDIX,
Nos. 10 & 11.APPENDIX,
SCHEDULE of LICENCE DUTIES payable in each District

District.	1. Salmon Rods.	2. Cross Lines.	3. Snap Nets.	4. Draft Nets.	5. Drift Nets.	6. Trammel Nets for Pollen.	7. Pole Nets.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1. Dublin,	1 0 0	2 0 0	1 10 0	3 0 0	3 0 0	1 10 0	2 0 0
2. Wexford,	1 0 0	1 0 0	0 15 0	3 0 0	1 10 0	0 15 0	1 0 0
3. Waterford,	1 0 0	2 0 0	1 10 0	3 0 0	3 0 0	1 10 0	2 0 0
4. Lismore,	1 0 0	2 0 0	1 10 0	3 0 0	3 0 0	1 10 0	2 0 0
5. Cork,	1 0 0	2 0 0	1 10 0	3 0 0	3 0 0	1 10 0	2 0 0
6 ¹ . Skibbereen,	1 0 0	1 0 0	0 15 0	3 0 0	3 0 0	0 15 0	1 0 0
6 ² . Bantry,	1 0 0	1 0 0	0 15 0	3 0 0	3 0 0	0 15 0	1 0 0
6 ³ . Kenmare,	1 0 0	1 0 0	0 15 0	1 10 0	1 10 0	0 15 0	1 0 0
7. Killarney,	1 0 0	2 0 0	1 0 0	3 0 0	3 0 0	0 15 0	1 0 0
8. Limerick,	1 0 0	2 0 0	1 10 0	3 0 0	3 0 0	1 10 0	2 0 0
9. Galway,	1 0 0	2 0 0	1 10 0	3 0 0	3 0 0	1 10 0	2 0 0
10 ¹ . Ballynakill,	1 0 0	2 0 0	1 10 0	3 0 0	3 0 0	1 10 0	2 0 0
10 ² . Bangor,	1 0 0	2 0 0	1 10 0	3 0 0	3 0 0	1 10 0	2 0 0
11. Ballina,	1 0 0	2 0 0	1 10 0	3 0 0	3 0 0	1 10 0	2 0 0
12. Sligo,	1 0 0	2 0 0	1 10 0	3 0 0	3 0 0	1 10 0	2 0 0
13. Ballyshannon,	1 0 0	2 0 0	1 10 0	3 0 0	3 0 0	1 10 0	2 0 0
14. Letterkenny,	1 0 0	2 0 0	1 10 0	3 0 0	3 0 0	1 10 0	2 0 0
15 ¹ . Londonderry,	1 0 0	2 0 0	1 10 0	3 0 0	3 0 0	1 10 0	2 0 0
15 ² . Coleraine,	1 0 0	2 0 0	0 15 0	3 0 0	1 10 0	1 0 0	2 0 0
16. Ballycastle,	1 0 0	2 0 0	1 10 0	3 0 0	3 0 0	1 10 0	2 0 0
17 ¹ . Drogheda,	1 0 0	2 0 0	1 10 0	3 0 0	3 0 0	0 15 0	2 0 0
17 ² . Dundalk,	1 0 0	2 0 0	1 10 0	3 0 0	3 0 0	0 15 0	2 0 0

APPENDIX,
SCHEDULE of LICENCE DUTIES received by the BOARDS of

District.	Number and Description of Licences sold in 1870.																1870. Amount of Licence Duty.	1870. Per- centage on Poor Law Valuation.	1870. Total Amount received.	1870. Ave- rage No. em- ployed.
	1. Salmon Rods.	2. Cross Lines.	3. Snap Nets.	4. Draft Nets.	5. Drift Nets.	6. Trammel Nets, for Pollen.	7. Pole Nets.	8. Bag Nets.	9. Fly Nets.	10. Stake Nets.	11. Head Weirs.	12. Box, Crib, &c.	13. Gap, Eye, &c.	14. Sweepers.	15. Cogbills.	16. Loop Nets.				
1. Dublin,	210	1	-	17	-	-	-	-	-	-	-	-	-	-	-	-	£ s. d. 158 0 0	£ s. d. —	£ s. d. 158 0 0	314
2. Wexford,	117	-	-	54	-	1	-	-	-	-	-	-	-	-	-	-	£ s. d. 167 5 0	—	£ s. d. 167 5 0	443
3. Waterford,	298	25	212	24	66	-	-	-	-	4	1	4	13	-	-	-	£ s. d. 961 13 4	—	£ s. d. 961 13 4	1,716
4. Lismore,	346	13	36	4	65	-	2	1	-	2	-	2	-	-	-	-	£ s. d. 554 10 0	10 10 0	£ s. d. 565 0 0	694
5. Cork,	539	6	-	36	-	-	-	1	-	-	-	-	-	-	-	-	£ s. d. 399 10 0	—	£ s. d. 399 10 0	771
6 ¹ . Skibbereen,	17	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	£ s. d. 28 0 0	—	£ s. d. 28 0 0	89
6 ² . Bantry,	15	-	-	10	4	-	-	-	-	-	-	-	-	-	-	-	£ s. d. 35 10 0	—	£ s. d. 35 10 0	71
6 ³ . Kenmare,	31	-	-	8	-	-	-	1	-	-	-	-	-	7	-	-	£ s. d. 58 10 0	—	£ s. d. 58 10 0	125
7. Killarney,	144	6	-	66	-	-	-	-	-	-	-	2	-	-	-	-	£ s. d. 299 0 0	—	£ s. d. 299 0 0	550
8. Limerick,	323	38	34	113	121	-	20	-	-	22	1	10	142	-	-	-	£ s. d. 1,938 10 0	21 0 0	£ s. d. 1,959 10 0	2,353
9. Galway,	75	8	-	18	-	2	-	-	-	-	-	6	23	-	-	-	£ s. d. 216 0 0	27 0 0	£ s. d. 243 0 0	221
10 ¹ . Ballynakill,	35	-	-	16	-	-	1	-	-	-	-	-	-	-	-	-	£ s. d. 85 0 0	—	£ s. d. 85 0 0	136
10 ² . Bangor,	20	-	-	20	-	-	-	1	-	-	-	-	-	-	-	-	£ s. d. 90 0 0	—	£ s. d. 90 0 0	144
11. Ballina,	66	1	-	28	8	-	-	2	-	-	-	7	13	-	-	-	£ s. d. 279 0 0	—	£ s. d. 279 0 0	313
12. Sligo,	49	-	-	15	-	-	-	2	-	-	-	-	6	-	-	-	£ s. d. 95 10 0	—	£ s. d. 95 10 0	159
13. Ballyshannon,	108	6	-	34	1	-	3	-	-	1	-	4	-	-	31	-	£ s. d. 382 0 0	19 0 0	£ s. d. 351 0 0	331
14. Letterkenny,	52	1	-	13	-	-	-	-	-	-	-	3	-	-	-	11	£ s. d. 120 0 0	—	£ s. d. 120 0 0	145
15 ¹ . Londonderry,	109	8	-	38	11	-	3	4	-	3	-	-	-	-	-	-	£ s. d. 353 10 0	98 0 0	£ s. d. 451 10 0	445
15 ² . Coleraine,	96	1	1	102	-	72	-	2	-	-	-	4	-	-	35	-	£ s. d. 623 15 0	103 0 0	£ s. d. 626 15 0	792
16. Ballycastle,	31	-	-	12	-	-	-	14	-	-	-	-	-	-	-	-	£ s. d. 191 10 0	—	£ s. d. 191 10 0	159
17 ¹ . Drogheda,	106	6	3	59	-	-	-	1	-	-	1	3	54	-	-	-	£ s. d. 346 10 0	—	£ s. d. 346 10 0	599
17 ² . Dundalk,	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	—	—	—	—
Total,	2,787	120	286	693	276	75	29	29	-	32	3	45	291	7	66	11	£ s. d. 7,233 8 4	£ s. d. 278 10 0	£ s. d. 7,511 13 4	10,590

salmon Rods, . . . 1 man.
Cross Lines, . . . 2 men.
Snap Nets, . . . 4 do.Draft Nets, . . . 6 men.
Drift Nets, . . . 3 do.
Trammel Nets, . . 2 do.The estimate of the average number of
Pole Nets, . . . 3 men.
Bag Nets, . . . 4 do.
Fly Nets, . . . 4 do.

Division of Drogheda District on 18th September, 1871.

49

APPENDIX,
Nos. 10 & 11.

No. 10.

8. Bag Nets.	9. Fly Nets.	10. Stake Nets.	11. Head Weirs.	12. Box, Crib, &c.	13. Gap, Eye, &c.	14. Sweepers.	15. Coghills.	16. Loop Nets.
£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
10 0 0	30 0 0	30 0 0	6 0 0	10 0 0	1 0 0	—	—	—
					0 10 0	—	—	—
					0 13 4	—	—	—
					1 0 0	—	—	—
					1 0 0	—	—	—
					0 10 0	—	—	—
					0 10 0	—	—	—
					0 10 0	—	—	—
					0 10 0	8 0 0	1 10 0	—
					0 10 0	—	—	—
					1 0 0	—	—	—
					1 0 0	—	—	—
					1 0 0	—	—	—
					1 0 0	—	—	—
					1 0 0	—	—	—
					0 10 0	—	1 0 0	—
1 0 0	—	—	1 0 0					
1 0 0	—	—	—					
1 0 0	—	1 0 0	—					
1 0 0	—	—	0 10 0					
1 0 0	—	1 0 0	—					

No. 11.

CONSERVATORS for the Years 1870 and 1871.

District.	Number and Description of Licences sold in 1871.																1871. Amount of Licence Duty.	1871. Per-centage on Poor Law Valuation.	1871. Total Amount received.	1871. Ave- rage No. em- ployed.	Increase or Decrease between 1870 and 1871.				
	1. Salmon Rode.	2. Cross Lines.	3. Snap Nets.	4. Draft Nets.	5. Drift Nets.	6. Trammel Nets for Pollen.	7. Pole Nets.	8. Bag Nets.	9. Fly Nets.	10. Stake Nets.	11. Head Weirs.	12. Box, Crib, &c.	13. Gap, Eyc, &c.	14. Sweepers.	15. Coghills.	16. Loop Nets.					Increase in Amount.	Decrease in Amount.	Increase in Number employed.	Decrease in Number employed.	
1	154	1	-	16	-	-	-	-	-	-	-	-	-	-	-	-	£ 201 0 0	£ s. d. —	£ 201 0 0	246	£ s. d. 43 0 0	£ s. d. —	-	-	68
2	95	-	-	42	-	1	-	-	-	-	-	-	-	-	-	-	221 15 0	—	221 15 0	349	54 10 0	—	-	-	94
3	224	24	214	21	76	-	-	-	-	4	1	4	21	-	-	-	1,064 0 0	2 12 0	1,066 12 0	1,696	104 18 8	—	-	-	21
4	245	16	37	6	93	-	1	1	-	3	-	2	-	-	-	-	751 10 0	12 0 0	763 10 0	246	198 10 0	—	252	-	-
5	322	4	-	56	4	-	-	1	-	1	-	-	-	-	-	-	550 0 0	—	550 0 0	694	150 10 0	—	-	-	77
6 ¹	14	-	-	11	-	-	-	-	-	-	-	-	-	-	-	-	47 0 0	—	47 0 0	80	19 0 0	—	-	-	9
6 ²	15	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	45 0 0	—	45 0 0	75	9 10 0	—	4	-	-
6 ³	25	-	-	8	-	-	-	1	-	-	-	-	-	7	-	-	68 0 0	—	68 0 0	119	9 10 0	—	-	-	6
7	114	4	-	64	-	-	-	-	-	-	-	2	-	-	-	-	334 0 0	—	334 0 0	507	85 0 0	—	-	-	43
8	234	37	34	81	133	-	19	-	-	25	1	9	143	-	-	-	2,028 0 0	13 0 0	2,041 0 0	2,043	81 10 0	—	-	-	212
9	179	12	-	13	-	2	-	-	-	-	-	6	19	-	-	-	324 0 0	60 0 0	384 0 0	325	141 0 0	—	104	-	-
10 ¹	37	-	-	21	-	-	2	-	-	-	-	-	-	-	-	-	104 0 0	—	104 0 0	169	19 0 0	—	35	-	-
10 ²	23	-	-	20	-	-	-	1	-	-	-	-	-	-	-	-	93 0 0	—	93 0 0	147	3 0 0	—	3	-	-
11	79	1	-	26	13	-	-	2	-	-	-	7	7	-	-	-	295 0 0	—	295 0 0	328	16 0 0	—	15	-	-
12	29	-	-	14	-	-	-	2	-	-	-	-	11	-	-	-	102 0 0	—	102 0 0	143	6 10 0	—	-	-	16
13	114	10	-	36	-	-	3	-	-	1	-	4	-	-	28	-	346 0 0	126 8 9	472 8 9	392	121 8 9	—	11	-	-
14	61	-	-	12	-	-	-	-	-	-	-	3	-	-	7	-	134 0 0	7 0 0	141 0 0	141	21 0 0	—	-	-	4
15 ¹	70	7	-	35	25	-	3	4	-	3	-	-	-	-	-	-	400 0 0	94 0 0	494 0 0	456	42 10 0	—	11	-	-
15 ²	81	1	2	107	-	86	-	2	-	-	-	4	21	-	29	-	601 10 0	164 0 0	765 10 0	985	138 15 0	—	193	-	-
16	24	-	-	11	2	-	-	14	-	-	-	-	-	-	-	3	204 10 0	8 0 0	212 10 0	159	21 0 0	—	-	-	-
17 ¹	88	7	2	80	-	-	-	1	-	-	1	4	46	-	-	-	447 0 0	14 10 0	461 10 0	688	115 0 0	—	89	-	-
17 ²	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	3 0 0	—	3 0 0	3	3 0 0	—	3	-	-
	2227	124	289	689	346	89	28	29	-	37	3	45	268	7	60	10	8,364 5 0	501 10 9	8,965 15 9	10,690	1354 2 5	—	720	550	-

men employed is made up as follows:—

Stake Nets, . . . 4 men.
Head weirs, . . . 1 man.
Box, crib, &c. (every 5) 2 men.

Gap, Eye, &c.	. 2 men.
Sweepers,	. 6 do.

Coghills, . . . 1 man.
Loop or Frame Nets, . 1 do.

* Received from Drogheda Board on division, £70 15s. 11d.

† Increase in Licence duty in 1871 over 1870—£1,354 2s. 5d.

APPENDIX,
No. 12.

APPENDIX, No. 12.—AMOUNT OF LICENCE DUTY received for the different Fishing Engines for the Year 1871, in each District.

DISTRICT.	Single Bods.	Cross Lines.	Snap Nets.	Draft Nets.	Drift Nets.	Trammel Nets, or Draft Nets for Pollen.	Pole Nets.	Bag Nets.	Fly Nets.	Stake Nets.	Head Weirs.	Box, Crib, &c.	Gap, Eye, &c.	Sweepers.	Coghills.	Loop Nets.
1 Dublin,	£ s. d. 154 0 0	£ s. d. 2 0 0	£ s. d. —	£ s. d. 45 0 0	£ s. d. —	£ s. d. —	£ s. d. —	£ s. d. —	£ s. d. —	£ s. d. —	£ s. d. —	£ s. d. —	£ s. d. —	£ s. d. —	£ s. d. —	£ s. d. —
2 Wexford,	95 0 0	—	—	126 0 0	—	0 15 0	—	—	—	—	—	—	—	—	—	—
3 Waterford,	224 0 0	48 0 0	321 0 0	63 0 0	228 0 0	—	—	—	—	120 0 0	6 0 0	40 0 0	14 0 0	—	—	—
4 Lismore,	245 0 0	32 0 0	55 10 0	18 0 0	279 0 0	—	2 0 0	10 0 0	—	90 0 0	—	20 0 0	—	—	—	—
5 Cork,	322 0 0	8 0 0	—	168 0 0	12 0 0	—	—	10 0 0	—	30 0 0	—	—	—	—	—	—
6 ¹ Skibbereen,	14 0 0	—	—	33 0 0	—	—	—	—	—	—	—	—	—	—	—	—
6 ² Bantry,	15 0 0	—	—	30 0 0	—	—	—	—	—	—	—	—	—	—	—	—
6 ³ Kenmare,	25 0 0	—	—	12 0 0	—	—	—	10 0 0	—	—	—	—	—	21 0 0	—	—
7 Killarney,	114 0 0	8 0 0	—	192 0 0	—	—	—	—	—	—	—	20 0 0	—	—	—	—
8 Limerick,	234 0 0	74 0 0	51 0 0	243 0 0	399 0 0	—	38 0 0	—	—	750 0 0	6 0 0	90 0 0	143 0 0	—	—	—
9 Galway,	179 0 0	24 0 0	—	39 0 0	—	3 0 0	—	—	—	—	—	60 0 0	19 0 0	—	—	—
10 ¹ Ballynakill,	37 0 0	—	—	63 0 0	—	—	4 0 0	—	—	—	—	—	—	—	—	—
10 ² Bangor,	23 0 0	—	—	60 0 0	—	—	—	10 0 0	—	—	—	—	—	—	—	—
11 Ballina,	79 0 0	2 0 0	—	78 0 0	39 0 0	—	—	20 0 0	—	—	—	70 0 0	7 0 0	—	—	—
12 Sligo,	29 0 0	—	—	42 0 0	—	—	—	20 0 0	—	—	—	—	11 0 0	—	—	—
13 Ballyshannon,	114 0 0	20 0 0	—	108 0 0	—	—	6 0 0	—	—	30 0 0	—	40 0 0	—	—	28 0 0	—
14 Letterkenny,	61 0 0	—	—	36 0 0	—	—	—	—	—	—	—	30 0 0	—	—	—	7 0 0
15 ¹ Londonderry,	70 0 0	14 0 0	—	105 0 0	75 0 0	—	6 0 0	40 0 0	—	90 0 0	—	—	—	—	—	—
15 ² Coleraine,	81 0 0	2 0 0	1 10 0	321 0 0	—	86 0 0	—	20 0 0	—	—	—	40 0 0	21 0 0	—	29 0 0	—
16 Ballycastle,	24 0 0	—	—	33 0 0	6 0 0	—	—	140 0 0	—	—	—	—	—	—	—	1 10 0
17 ¹ Drogheda,	88 0 0	14 0 0	3 0 0	240 0 0	—	—	—	10 0 0	—	—	6 0 0	40 0 0	46 0 0	—	—	—
17 ² Dundalk,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8 0 0	—
Total,	2227 0 0	248 0 0	432 0 0	2056 0 0	1038 0 0	89 15 0	56 0 0	290 0 0	—	1110 0 0	18 0 0	150 0 0	261 0 0	21 0 0	40 0 0	8 10 0

APPENDIX, No. 13.

APPENDIX,
No. 13.

LIST of RIVERS, the MOUTHS of which have been defined, one hundred and thirty-six in number.

Section 22 of 5 & 6 Vic., c. 106, enacts "That where the breadth of the mouth or entrance into the sea of any river, the inland portion of which is frequented by Salmon, is less than half a mile, statute measure, at low water of spring tides, it shall not be lawful for any person whatsoever (save and except the proprietor of a several fishery within the limits thereof) to place or erect any stake weir or fixed net within one statute mile, seaward, coastwards, or inwards, from or on either side of the mouth or entrance of any such river into the sea."

Section 44 of 13 & 14 Vic., c. 88, enacts "That it shall not be lawful for any person, save and except the owner of a several fishery within the limits thereof, at any time to shoot, draw, or use any net for taking Salmon at the mouth of any river, where the breadth of such mouth between the banks thereof shall not exceed a quarter of a mile statute measure; and that it shall not be lawful for any person, save such owner as aforesaid, within such limits as aforesaid, to shoot, draw, or use any net for taking Salmon within half a mile seaward, or half a mile inwards, or along the coast from the mouth of any river."

Section 3 of 26 & 27 Vic., c. 114, enacts "That no bag net shall be placed or allowed to continue in any river, or the estuary of any river, as such river or estuary has been defined by the Commissioners of Fisheries, or shall be defined by the Commissioners under this Act, or within a distance of less than three statute miles from the mouth of any river, as defined."

District.	Name of River.	District.	Name of River.
Dublin, . . .	Liffey. Dodder. Bray. Vartry. Staney. Owenavarragh or Courtown. Inch. Urrin. Boro.	Ballinakill, . . .	Dawros. Derrychorraun. Ballinaboy.
Wexford, . . .	Suir. Nore, and Barrow. Bannow.	Bangor, . . .	Glenamoy. Owenmore. Owenduff. Owengarva. Burrischoole. Newport. Owenwee or Belclare. Bunowen or Louisburgh.
Waterford, . . .	Blackwater. Womanagh.	Ballina, . . .	Easky. Moy. Cloonaghmore or Palmerstown. Ballington or Ballycastle. Drumcliff. Sligo.
Lismore, . . .	Tramore or Douglas. Lee. Owenacurra or Middleton. Owenbeg or Carrigaline. Argideen. Bandon.	Sligo, . . .	Ballisodare. Dunmoran. Glen or Teelin. Ballyhadoo or Kilcar. Eany-water or Inver. Eske. Erne. Drowes or Bundrowes. Duff or Bunduff. Oily. Fintragh. Bungosteen or Loughhead. Crann or Buncrana. Mill. Leanan or Rathmelton. Swilly. Owenmarve. Gweebarra. Owenee. Owentocker. Bracky. Lackagh. Ray. Tullaghobegly. Glenna. Clady. Gweedore.
Cork, . . .	Owenacurra or Middleton. Owenbeg or Carrigaline. Argideen. Bandon.	Ballyshannon, . . .	Foyle. Roe. Culdaff. Bann. Glenarm. Glenariffe (Red Bay). Dall or Cushendall. Glendun or Cushendun. Margy or Ballycastle. Bush or Bushmills.
Skibbereen, . . .	Roury. Ilen.	Letterkenny, . . .	Boyne. Glyde and Dee, or Annagassen. Fane. Castletown or Dundalk. Piedmont. Quoile. Dundrum. Shimna or Tollymore. Annalong. Kilkeel. White Water. Causeway Water.
Bantry, . . .	Leamawaddra. Glengariffe. Coomhola or Snave. Ouvane or Ballylickey. Mealagh or Dunnemark. Adrigole.		
Kenmare, . . .	Roughty. Sheen. Finnehy. Blackwater (Kerry). Cloonee. Owenshagh. Crowanshagh. Sneem.		
Killarney, . . .	Curran. Inny. Carragh. Leune. Maine. Ferta or Valencia. Rosbehy. Shannon. Caheen. Deel or Askeaton. Fergus. Maigue. Bunratty. Doonbeg. Feonagh. Glennahoo. Scorid. Owenmore. Clohane.		
Limerick, . . .	Corrib. Furbogh. Spiddle. Screeb. Ballinahinch. Cashla. Invermore. Owengowla. Crumlin. Carrownisky. Bundorrigha. Erriff. Culfin.		
Galway, . . .			
Ballinakill, . . .			

APPENDIX,
No. 14.

APPENDIX, No. 14.

BY-LAWS, ORDERS, &c., made by the INSPECTORS of IRISH FISHERIES, up to 31st December, 1871.

District.	Places affected.	Nature of By-law, Order, &c.	Date.
Cork, . . .	Bandon River and Tributaries.	Prohibiting for three years the use of all nets (except landing nets, as auxiliary to angling with rod and line), for the capture of salmon or trout, in any part of, above a line drawn across the said river, at right angles with the river's course, from the northern point of the quay, at the mouth of the creek, between the townlands of Rockhouse and Kilmacsimon, to a point on the opposite shore, in the townland of Ahern.	2nd November, 1869.
Belfast Lough, . . .	Lough of Belfast, . . .	Repealing by-law prohibiting trawling, . . .	27th November, 1869.
Lough Swilly, . . .	Lough Swilly, . . .	Repealing by-law prohibiting trawling, . . .	8rd December, 1869.
Ballycastle, . . .	Bush River, . . .	Repealing the definition of the estuary of, . . .	28th February, 1870.
Sligo, . . .	Sligo River, . . .	Prohibiting snatching, . . .	1st March, 1870.
Killarney, . . .	Fishing weir in Waterville River.	Regulating the width between the bars or rails of the inscales, and of the heck, or the up-stream side of the boxes or cribs in said weir.	7th March, 1870.
Bantry, . . .	Tidal portions of rivers, . . .	Permitting use of nets with meshes of $1\frac{1}{4}$ inches from knot to knot.	7th March, 1870.
Kenmare River, . . .	Kenmare River, . . .	Repealing by-law prohibiting trawling in Kenmare, . . .	19th March, 1870.
Ballina, . . .	River Moy, . . .	Permitting use of nets with meshes of $1\frac{1}{2}$ inches from knot to knot.	21st May, 1870.
Ditto, . . .	Cloonaghmore or Palmers-town River.	Re-defining the mouth and estuary of, . . .	16th June, 1870.
Waterford, . . .	River Corock (above Wellington Bridge).	Permitting use of nets with meshes of 1 inch from knot to knot.	7th July, 1870.
Coleraine, . . .	District, . . .	Prohibiting snatching, . . .	17th October, 1870.
Wexford, . . .	Derrywater and River Derry,	Permitting the use of nets with meshes of 1 inch from knot to knot.	26th October, 1870.
Ditto, . . .	Potter River, . . .	Ditto, . . .	26th October, 1870.
Lismore, . . .	River Blackwater, . . .	Limiting the length of drift nets to 220 yards, . . .	2nd November, 1870.
Donegal Bay, . . .	Donegal Bay, . . .	Repealing by-law prohibiting trawling; save so far as it relates to Inver Bay.	15th November, 1870.
Limerick, . . .	Fergus River, . . .	Prohibiting the use of drift nets, . . .	16th December, 1870.
Ballina, . . .	Moy River, . . .	Prohibiting angling for trout in April and May, . . .	11th February, 1871.
Ballyshannon, . . .	Erne River, . . .	Permitting nets of 1 inch mesh in tideway, . . .	13th February, 1871.
Killarney, . . .	Waterville River, . . .	Prohibiting netting in certain places and at certain times,	18th February, 1871.
Coleraine, . . .	Lough Neagh, . . .	Permitting pollen to be taken by trammel nets of 1 inch from 1st February to 31st October.	20th February, 1871.
Londonderry, . . .	Lough Foyle and tidal parts of river, . . .	Permitting use of nets with meshes of 1 inch from knot to knot.	28th February, 1871.
Limerick, . . .	Maigne River, . . .	Prohibiting use of nets above railway bridge below Adare,	1st March, 1871.
Sligo, . . .	Lough Doon, . . .	Permitting use of nets meshes $\frac{1}{2}$ an inch from knot to knot,	24th March, 1871.
Cork, . . .	Lee River, . . .	Prohibiting use of nets in South Channel, . . .	21st April, 1871.
Londonderry, . . .	Baronscourt Lakes and Streams.	Permitting nets with meshes of $\frac{1}{2}$ an inch from knot to knot for capture of fish other than salmon or trout.	22nd April, 1871.
Bantry, . . .	Snava, Mealagh, Ouvana, and Carrigboy Rivers.	Prohibiting use of all nets in fresh water portions, . . .	21st June, 1871.
Glandore Harbour, . . .	—	Repealing by-law, relative to trawling, dated 11th September, 1861, . . .	11th November, 1871.

APPENDIX, No. 15.

ABSTRACT OF BY-LAWS, ORDERS, &c., in force on 1st January, 1872, relating to the FISHERIES OF IRELAND.

APPENDIX,
No. 15.Abstract of
By-Laws,
Orders, &c.

Place affected by By-Law, and Date thereof.	Nature of By-Law.	Place affected by By-Law, and Date thereof.	Nature of By-Law.
	TRAWLING.		
Dublin (10th Oct., 1842.)	Prohibiting Trawling inside lines drawn from the Bailey Light-house at Howth, to the Easternmost point of the rocks called the "Mugglins;" thence by a straight line to the Southern point of Dalkey Island; thence by a straight line across Dalkey Sound, in the direction of the signal station on Killiney Hill.	Dungarvan Bay— <i>continued.</i>	o'Clock, a.m., in the following day, during May, June, July, August, and September. Also prohibiting such Nets athwart or within 200 yards of any boat, which at the time of setting such net shall be moored, and the Crew thereof engaged in Line Fishing; and to every train of such Trammel or Moored Nets shall be attached at least one floating buoy or board, upon which shall be painted in legible characters not less than one inch in length, in white upon a black ground, the Letter of the District, and the name of the Owner to which such Net belongs.
East Coast, (14th Feb., 1851.)	Prohibiting Trawling within a line drawn from the Nose of Howth, to the Eastern point of St. Patrick's Island (Skerries); thence to Clogher Head; thence to Dunany Point; thence to Cranfield Point, in the County Down.	Inver Bay, (24th Sept., 1860.)	Prohibiting the use of Trammel Nets within or to the North-east of a line drawn from the Mouth of the Bunlaghy River to Doorin Point.
Dundrum Bay, &c., (3rd Dec., 1851.)	Prohibiting Trawling from Hellyhunter Rock, off Cranfield Point, to St. John's Point, both in the County Down.	Kenmare River Estuary, (31st Dec., 1864.)	Within the Estuary of the Kenmare River, in the County of Kerry, and eastward of a line drawn from the western point of Lamb's Head to the western point of Cod's Head, the use of Trammel and other Moored Nets for the capture of Sea Fish is authorized and permitted, from the hour of Three o'Clock in the Afternoon of any one day to the hour of Nine o'Clock in the Morning of the day next following, during the months of October, November, December, January, February, and March, in each year; and from the hour of Five o'Clock in the Afternoon of any one day to the hour of Seven o'Clock in the Morning of the day following, during the months of April, May, June, July, August, and September.
Donegal Bay, (16th Feb., 1857.)	Prohibiting Trawling within a straight line from the Bian Rock, to a place called Doorin Point.		OYSTERS.
Galway Bay, (22nd March, 1843, and 9th Jan., 1854.)	Prohibiting Trawling within a line from Barna Pier to Gleninagh Castle. Also when large shoals of Herrings shall have set in in the Bay, and while Boats are engaged in Drifting for Herrings or Mackerel, and when Boats shall commence Fishing for Herrings or Mackerel, that Trawl Boats shall keep at a distance of three miles from them.	Wexford Coast, (8th April, 1862.)	First.—All persons engaged in fishing for or taking Oysters off the said Wexford Coast, south of Raven Point, shall cull all such Oysters as may be taken or caught; and shall not remove from any Fishing Ground or Oyster Bed any Oyster of less dimensions than three inches, at the greatest diameter thereof, and shall immediately throw back into the Sea all Oysters of less dimensions than aforesaid, as well as all gravel and fragments of shells as shall be raised or taken while engaged in such fishing; and no person shall take from any Oyster Bed, Rock, Strand, or Shore, off said Wexford Coast, south of Raven Point, any Oyster of less dimensions than three inches, at the greatest diameter thereof; and any person offending in any respect against this By-Law, Rule, or Regulation shall, for each offence, forfeit and pay a sum of Two Pounds.
Brandon Bay, (23rd Aug., 1860.)	Prohibiting Trawling within a line drawn from Brandon Point to Coosanea.		Second.—All persons are hereby prohibited from throwing into the Sea, on any Oyster Bed, or Oyster Fishing Ground off the said Wexford Coast, the ballast of any boat, or any other matter or thing injurious or detrimental to the Oyster Fishery; and all persons acting contrary hereto shall, for each offence, forfeit and pay a sum of Two Pounds.
Bantry Bay, (27th March, 1858.)	Prohibiting Trawling within a straight line from Crowdy Point to Carrigskye Rock; and from thence to Reenavanny Point, on the North Shore of Whiddy Island. Prohibiting Trawling between sunset and sunrise.		First.—That between the 1st May and 1st September, no boat shall have on board any dredge or other implement for taking Oysters.
Waterford Harbour, (2nd March, 1852, and 18th June, 1860.)	Prohibiting Trawling by Boats exceeding five tons measurement, within a line drawn from Creden Head to Temple Church.		Second.—Every fisherman shall, on the fishing ground, cull all Oysters, and shall not remove any Oyster of less dimensions than two and a-half inches at the greatest diameter thereof; and shall throw back into the Sea all gravel and fragments of shells as he shall raise while engaged in such fishing.
Wexford Coast, (20th April, 1849.)	Prohibiting Trawling in all places where there are Boats engaged in Herring or Mackerel Drift Net Fishing; and that Trawl Boats shall keep at a distance of at least three miles from all boats fishing for Herrings or Mackerel, with Drift Nets. And whenever Herring or Mackerel Boats shall commence Drift Net Fishing in any place, on or off the Coast of Wexford, the Trawl Boats shall depart therefrom, and keep at least three miles distant from the Drift Net Herring or Mackerel Boats.	Cork Harbour, (28th Oct., 1853.)	Third.—All persons are prohibited from throwing into the Sea, on any Oyster Bed or Oyster Fishing Ground, the ballast of any boat, or any other matter or thing injurious to the Oyster Fishery.
	TRAMMEL NETS.		Fourth.—No person shall, between Sunset and Sunrise, dredge for, take, or catch any Oysters within the Harbour of Cork.
Dungarvan Bay, (4th July, 1849.)	Prohibiting the use of Trammel and every other Fixed or Moored Net (except Bag or other Nets for the taking of Salmon) in Dungarvan Bay, within the limit formed as follows, namely, the space lying between a line passing due East and West, through the Northernmost point of Helvick Head, and a line passing due East and West through the Southernmost point of Ballinacourty Head, in the Co. Waterford; but to the North and East of the line through Ballinacourty Head, and to the South and West of the line through Helvick Head, such Trammel or Moored Nets may be set, and remain set in the water from Three o'Clock, p.m., of one day, until Nine o'Clock, a.m., in the following day, during January, March, October, November, and December in each Year; and from Five o'Clock, p.m., of one day, to Seven		

APPENDIX.
No. 15.Abstract of
By-Laws,
Orders, &c.

APPENDIX, No. 15—continued.

ABSTRACT of BY-LAWS, ORDERS, &c., in force on 1st January, 1872, relating to the
FISHERIES of IRELAND

Place affected by By-Law, and Date thereof.	Nature of By-Law.	Place affected by By-Law, and Date thereof.	Nature of By-Law
Tralee Bay, (28th Sept., 1860.)	<p>First.—That between the 1st day of April and the 1st day of November in any year, being the Close Season for Oysters in the said Bay of Tralee, no boat, in the said Bay of Tralee, shall have on board any dredge or other implement for the taking of Oysters; and if, between the periods aforesaid, there shall be on board any boat any such dredge or other implement for the taking of Oysters, the master or owner of such boat shall, for each such offence, forfeit and pay a sum of Five Pounds.</p> <p>Second.—All persons engaged in fishing for or taking Oysters in said Bay of Tralee, shall cull all such Oysters as may be taken or caught; and shall not remove from any fishing ground or Oyster Bed any Oyster of less dimensions than two inches and one-half, at the greatest diameter thereof, and shall immediately throw back into the Sea all Oysters of less dimensions than aforesaid, as well as all gravel and fragments of shells as shall be raised or taken while engaged in such fishing; and no person shall take from any rock, strand, or shore of said Bay of Tralee, any Oyster of less dimensions than two inches and one-half, at the greatest diameter thereof; and any person offending in any respect against this By-Law, Rule, or Regulation shall, for each offence, forfeit and pay a sum of Two Pounds.</p> <p>Third.—All persons are hereby prohibited from throwing into the Sea, on any Oyster Bed, or Oyster Fishing Ground in the said Bay of Tralee, the ballast of any boat, or any other matter or thing injurious or detrimental to the Oyster Fishery; and all persons acting contrary hereto shall, for each offence, forfeit and pay a sum of Two Pounds.</p>	Clew Bay, County Mayo—continued.	<p>it may be lawful for any person to dredge for and take Oysters from any natural public bed in the said Clew Bay lying below the level of the lowest water of spring tides, between the 1st and 15th April and the 20th June and 1st October in each year, such periods being respectively included within the Close Time at present fixed for the Oyster fisheries within the said Clew Bay: Provided always, that if any Oysters dredged or taken during such part of the Close Season shall be brought to shore, or sold or offered for sale, or be found in the possession of any person on land, or be used for any other purpose than the replenishing or supplying any such artificial or other bed as aforesaid, every person so offending shall forfeit all such Oysters, and be subject and liable to the same penalties and forfeitures as by said first-recited Act (5 and 6 Vic.) prescribed in cases of offences against the provisions of the said first-recited Act for the observance of the Close Season in respect of Oysters.</p>
Achill Sound, Clew Bay, & Blacksod Bay, (15th Dec., 1860.)	<p>First.—That between the 1st day of April and the 1st day of October in any year, being the Close Season for Oysters in said Clew Bay, Achill Sound, and Blacksod Bay, no boat, in the said Clew Bay, Achill Sound, and Blacksod Bay, shall have on board any dredge or other implement for the taking of Oysters; and if, between the periods aforesaid, there shall be on board any boat any such dredge or other implement for the taking of Oysters, the master or owner of such boat shall for each such offence, forfeit and pay a sum of Five Pounds.</p> <p>Second.—All persons engaged in fishing for or taking Oysters in said Clew Bay, Achill Sound, and Blacksod Bay, shall cull all such Oysters as may be taken or caught; and shall not remove from any Fishing Ground or Oyster Bed any Oyster of less dimensions than two inches and one-half, at the greatest diameter thereof, and shall immediately throw back into the Sea all Oysters of less dimensions than aforesaid, as well as all gravel and fragments of shells as shall be raised or taken while engaged in such fishing; and no person shall take from any rock, strand, bed, or shore of said Clew Bay, Achill Sound, and Blacksod Bay, any Oyster of less dimensions than two inches and one-half, at the greatest diameter thereof; and any person offending in any respect against this By-Law, Rule, or Regulation shall, for each offence, forfeit and pay a sum of Two Pounds.</p> <p>Third.—All persons are hereby prohibited from throwing into the Sea, on any Oyster Bed, or Oyster Fishing Ground in said Clew Bay, Achill Sound, and Blacksod Bay, the ballast of any boat, or any other matter or thing injurious or detrimental to the Oyster Fishery; and all persons acting contrary hereto shall, for each offence, forfeit and pay a sum of Two Pounds.</p> <p>Fourth.—No person shall, between sunset and sunrise, dredge for, take, or catch, any Oysters within said Clew Bay, Achill Sound, and Blacksod Bay; and every person acting contrary hereto shall, for each offence, forfeit and pay a sum of Five Pounds.</p>	Carlingford Lough, (17th April, 1860.)	<p>First.—That between the 1st day of March and 1st day of November in any year, it shall not be lawful for any person to dredge for, take, catch, or destroy any Oysters or Oyster Brood within the said Lough of Carlingford, or off from any of the shores or rocks of said Lough, and any person offending against this By-Law shall, for each such offence, forfeit and pay a sum of Five Pounds.</p> <p>Second.—That between the 1st day of March and the 1st day of November in any year, no boat, in the said Lough of Carlingford, shall have on board any dredge or other implement for the taking of Oysters; and if, between the periods aforesaid, there shall be on board any boat any such dredge or other implement for the taking of Oysters, the master or owner of such boat shall, for each such offence, forfeit and pay a sum of Five Pounds.</p> <p>Third.—All persons engaged in fishing for or taking Oysters in said Lough of Carlingford, shall cull all such Oysters as may be taken or caught; and shall not remove from any Fishing Ground or Oyster Bed any Oyster of less dimensions than two inches and one-half, at the greatest diameter thereof, and shall immediately throw back into the Sea all Oysters of less dimensions than aforesaid, as well as all gravel and fragments of shells as shall be raised or taken while engaged in such fishing; and no person shall take from any rock, strand, or shore of said Lough of Carlingford, any Oyster of less dimensions than two inches and one-half, at the greatest diameter thereof; and any person offending in any respect against this By-Law, Rule, or Regulation shall, for each offence, forfeit and pay a sum of Two Pounds.</p> <p>Fourth.—All persons are hereby prohibited from throwing into the Sea, on any Oyster Bed or Oyster Fishing Ground in the said Lough of Carlingford, the ballast of any boat, or any other matter or thing injurious or detrimental to the Oyster Fishery; and all persons acting contrary hereto shall, for each offence, forfeit and pay a sum of Two Pounds.</p>
Clew Bay, County Mayo, (1st April, 1865.)	<p>That, for the sole purpose of replenishing and supplying licensed Oyster beds and other Oyster beds, the exclusive property of any person or persons within Clew Bay alone, in the County of Mayo, and for no other purpose whatever,</p>	Galway Bay, (18th March, 1868.)	<p>First.—All persons engaged in fishing for or taking Oysters in Galway Bay shall, on the Fishing Ground, cull all such Oysters as may be taken or caught, and shall not remove from any Fishing Ground or Oyster Bed any Oyster of less dimensions than two inches and one-half at the greatest diameter thereof, and shall immediately throw back into the Sea all Oysters of less dimensions than aforesaid, and all such gravel and fragments of shells as shall be raised or taken while engaged in such fishing; and any person offending in any respect against this By-Law, Rule, or Regulation shall, for each offence, forfeit and pay a sum of Two Pounds.</p> <p>Second.—All persons are hereby prohibited from throwing into the Sea on any Oyster Bed or Oyster Fishing Ground the ballast of any boat, or any other matter or thing injurious or detrimental to the Oyster Fishery; and all persons acting contrary hereto shall, for each such offence, forfeit and pay a sum of Two Pounds.</p>

APPENDIX, No. 15—*continued*.ABSTRACT of BY-LAWS, ORDERS, &c., in force on 1st January, 1872, relating to the
FISHERIES of IRELAND.APPENDIX,
No. 15.Abstract of
By-Laws,
Orders, &c.,

Place affected by By-Law, and Date thereof.	Nature of By-Law.	Place affected by By-Law, and Date thereof.	Nature of By-Law.
Galway Bay— <i>con.</i>	<p>Third.—No person shall, between Sunset and Sunrise, dredge for, take, or catch any Oysters within said Bay, or any of the Estuaries of the Rivers flowing into the same; and every person acting contrary hereto shall, for each offence, forfeit and pay a sum of Five Pounds.</p> <p>Fourth.—That between Nine o'clock in the Evening of any day and Six o'clock in the Morning of the following day, no boat shall have on board any dredge or other implement for the taking of Oysters; and if, between the hours aforesaid, there shall be on board any boat any such dredge or other implement for the taking of Oysters, the Master or Owner of such boat shall, for each such offence, forfeit and pay a sum of Five Pounds.</p>	Cork District, (11th Sept., 1866.)	<p>Prohibiting the catching or attempting to catch Salmon or Trout in any Tidal Water in the Cork District with a Spear, Lyster, Otter, Strokehaul, Drees Draw, or Gaff, except when the latter instrument may be used solely as auxiliary to angling with Rod and Line, or for the purpose of removing Fish from any legal Weir or Box by the Owner or Occupier thereof.</p> <p>Prohibiting the snatching or attempting to snatch Salmon or Trout in any Tidal or Fresh Water in the Cork District with any kind of Fish-hook, covered in part or in whole with any matter or thing, or uncovered.</p>
South-east Coast of Ireland, from Wicklow Head to Carnsore Point. (1st Sept., 1868.)	That the Close Time, during which it shall not be lawful to dredge for, take, catch, or destroy any Oysters or Oyster Brood, on or off the South-east coast of Ireland, between Wicklow Head and Carnsore Point, shall be between the 30th April and the 1st September in each year.	River Lee, Co. of the City of Cork. (7th January, 1863.)	Prohibiting, during the Close Season for Salmon the use of Draft Nets, or any other Net or Nets used as a Draft Net, having a foot-rope and leads or weights affixed thereto, within the following limits, viz.:—in that part of the River Lee, situate between Patrick's Bridge, in the City of Cork, and a line drawn across the said River Lee, from Blackrock Castle, on the south, to the Western extremity of the Townland of Dunkettle, on the North.
Coasts of Dublin, Wicklow and Wexford. (23rd April, 1869.) Approved by Her Majesty in Council, 29th April, 1869.	Prohibiting between the 30th April and 1st September in each year the dredging for, taking, catching, or destroying any Oyster or Oyster Brood on or off any part of the East and South-East Coast of Ireland, within the distance of Twenty Miles measured from a straight line drawn from the Eastern point of Lambay Island, in the County Dublin, to Carnsore Point, in the County Wexford, outside the exclusive Fishery Limits of the British Islands.	Argideen River, (24th Feb., 1860.)	Prohibiting the use of Nets of any kind whatsoever in the tidal part of the river known as the Argideen River, in the County of Cork, situated between the junction of the Owenkeagh or Blind River with the said Argideen River and the Bridge of Timoleague, all in the Barony of the East Division of East Carbery, and County of Cork.
SALMON AND TROUT.		Bandon River, (4th Dec., 1866.)	Prohibiting for three years the use of Nets (except Landing Nets as auxiliary to angling with rod and line) in any part of the Bandon River or its tributaries, above a line drawn from the northern point of the quay, at the mouth of the creek, between the townlands of Rockhouse and Kilmacsimon, to a point on the opposite shore in the townland of Ahern.
Teelin Estuary, (24th Feb., 1860.)	Prohibiting the use of Nets for the capture of Fish of any kind, with meshes of less than one inch from knot to knot (to be measured along the side of the square, or four inches to be measured all round each such mesh, such measurements being taken in the clear when the Net is wet), on that part of the coast of the County of Donegal inside, or to the North-east and North of lines drawn from Rossan Point to Teelin Head, and from Carrigan Head to Muckross Point, all in the Barony of Bannagh, and County of Donegal.	Bandon River, (2nd Nov., 1869.)	Extending for a further period of three years the By-Law (bearing date 4th December, 1866), and prohibiting the use of all Nets, except Landing Nets as auxiliary to angling with Rod and Line for the capture of Salmon or Trout, in any part of the Bandon River or its Tributaries, above a line drawn across said River at right angles with the River's course from the northern point of the quay at the mouth of the Creek between the Townlands of Rock House and Kilmacsimon to a point on the opposite shore in the Townland of Ahern.
River Liffey, (19th Jan., 1865.)	Prohibiting the catching, or attempting to catch, Salmon with any Net of greater length than 350 yards, in that part of the River Liffey which is situated between the Weir known as the Island Bridge Weir and a line drawn due North from Poolbeg Lighthouse.	River Shannon, (5th Feb., 1856.)	Prohibiting Net Fishing in that part of the River Shannon between Wellesley Bridge and the Railway Bridge, between 1st June and 12th February.
River Slaney, Co. Wexford. (25th March, 1854, and 4th March, 1862.)	<p>Prohibiting, during the Close Season for Salmon, the use of Nets of any kind whatsoever, between Ferrycarrig Bridge and the Town of Enniscorthy.</p> <p>Prohibiting, during the Open Season for Salmon, the use of Nets with meshes of less size than one and three-quarter inches from knot to knot, between Ferrycarrig Bridge and the Town of Enniscorthy.</p>	River Shannon, (22nd Nov., 1862.)	<p>First.—Prohibiting, between the 20th day of July and 1st day of November in each year, the use of Draft Nets, or any other Net or Nets used as a Draft Net, having a foot-rope and leads or weights affixed thereto, within the following limits, viz.:—in that part of the River Shannon situate between the Fishing Weir known as the Lax Weir, and a line drawn due North and South across the said River Shannon at the Western extremity of Graigue Island.</p> <p>Second.—Prohibiting Draft Nets for the capture of Fish of any kind, of a mesh less than one and three-quarter inches from knot to knot, to be measured along the side of the square, or seven inches to be measured all round each such mesh, such measurements being taken in the clear when the Net is wet, in the tidal parts of the River Shannon, or in the tidal parts of any of the Rivers flowing into the said River Shannon.</p>
Bessborough De- mesne, Co. Kil- kenny. (5th May, 1866.)	Permitting the use of Nets for the capture of Fish with Meshes of one inch from knot to knot (to be measured along the side of the square, or four inches to be measured all round each such Mesh, such measurements being taken in the clear, when the Net is wet,) within the Waters in, and Rivers running through the Demesne of Bessborough, in the County of Kilkenny: Provided that no Net having a less Mesh than one inch and three-quarters from knot to knot, shall be used in the said Rivers during the Months of April, May, and June.	Rivers Shannon and Maigue. (5th June, 1867.)	Prohibiting the Shooting of Fish in that part of River Shannon between Portumna Bridge and Shannon Bridge, and also in River Maigue.

APPENDIX,
No. 15.Abstract of
By-Laws,
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APPENDIX, No. 15—continued.

ABSTRACT of BY-LAWS, ORDERS, &c., in force on 1st January, 1872, relating to the
FISHERIES of IRELAND.

Place affected by By-Law, and Date thereof.	Nature of By-Law.	Place affected by By-Law, and Date thereof.	Nature of By-Law.
River Shannon, (5th May, 1866.)	Prohibiting the Fishing for Salmon or Trout by any means whatsoever, within a space of Twenty Yards from the Weir Wall of Tarmoharry, on the River Shannon.	Currane or Waterville River— Waterville Weir. (7th March, 1870.)	Permitting the space between the Bars or Rails of the Incales, and of the Heck or upstream side of the Boxes or Cribs of the Waterville Weir to be one and a quarter inches apart.
Lough Ree, River Shannon. (27th August, 1858.)	Permitting the use of Nets in Lough Ree, having a mesh of five inches in the round, measured when the Net is wet.	Buoh River, (28th Feb., 1870.)	Repealing Definition of Buoh River Estuary as fixed by the late Special Commissioners on 8th February, 1864.
River Fergus, (26th June, 1865.)	Prohibiting the Fishing for Salmon or Trout by any means whatsoever, within a space of Twenty Yards from the Weir Wall of Ennis, on the River Fergus.	Rivers in Bantry District. (7th March, 1870.)	Permitting use of Nets of a Mesh of one and a quarter inches from knot to knot (to be measured along the side of the square, or five inches to be measured all round each such Mesh, such measurement being taken in the clear when the Net is wet), in the tidal waters of the Bantry District, which comprises the whole of the sea along the coast between Milm Head in the County Cork and CrowHead in the same County, and around any Islands or Rocks situate off same, with the whole of the Tideways along said Coast and Rivers, and the whole of the tidal portions of the several Rivers and their Tributaries flowing into said Coast.
River Maigue, (17th Oct., 1864.)	Prohibiting the use of Draft Nets between Ferry Drawbridge and the old Bridge of Adare.	Ballina District, (21st May, 1870.)	Permitting the use of Nets with Meshes of one and a quarter inches from knot to knot (to be measured along the side of the square, or five inches to be measured all round each such Mesh, such measurements being taken in the clear, when the Net is wet).
Killarney District, (8th Feb., 1865.)	Prohibiting the catching, or attempting to catch, Salmon in any tidal water with a Spear, Lyster, Otter, Strokehaul, Dree-Draw, or Gaff, except when the latter instrument may be used solely as auxiliary to angling with rod and line, or for the purpose of removing fish from any legal Weir or Box by the owner or occupier thereof.	Waterford District, Corrock River. (7th July, 1870.)	Permitting use of Nets with Meshes of one inch from knot to knot (to be measured along the side of the square, or four inches to be measured all round such Mesh, such measurements being taken in the clear when the Net is wet).
Castlemaine Estuary, (27th Oct., 1858.)	Prohibiting, during the Salmon Close Season, the use of Draft Nets having a foot-rope and leads or weights affixed thereto, in the Estuary of Castlemaine inside the Bar of Inch.	Coleraine District, (17th Oct., 1870.)	Prohibiting smatching or attempting to smatch Salmon in any of the tidal or fresh waters of District.
Lough Neagh, (22nd April, 1846, and 24th Feb., 1860.)	Permitting Pollen to be taken by Trammel or Set Nets composed of Thread or Yarn of a fine texture, not less than ten hanks to the pound weight, doubled and twisted with a mesh of not less than one inch from knot to knot, from the 1st of March to the 29th September.	Wexford District, Derry Water, and River Derry. (26th Oct., 1870.)	Permitting use of Nets for the capture of Fish, having Meshes of one inch from knot to knot (to be measured along the side of the square, or four inches, to be measured all round each such Mesh, such measurements being taken in the clear when the Net is wet), in the rivers and streams following, that is to say, in the Derry Water, from its source near Killavea to Annacurragh Bridge, with the stream flowing into same from Moyne Church through Ballinglen, and the Tomnaakela River; and in the Greenisland, Shillelagh, and Derry River, from the bounds of the County Carlow, flowing past Tinnahely by Shillelagh to the bounds of the County Wexford, with the small streams flowing into that portion of the said river, all said rivers and streams being in the County Wicklow, for and during the months of May, June, July, and August, in each year.
Lough Neagh, (28th Feb., 1867.)	Prohibiting the use of Draft Nets for the capture of Pollen.	Wexford District, Potter River. (26th Oct., 1870.)	Permitting use of Nets for the capture of Fish with Meshes of one inch from knot to knot (to be measured along the side of the square, or four inches to be measured all round each such Mesh, such measurements being taken in the clear, when the Net is wet), in the tidal portions of the Potter River, situated below Brittas Bridge in the County of Wicklow.
Galway River, Lough Corrib, &c. (24th July, 1846.)	Prohibiting the use of the Instrument, commonly called Strokehaul or Snatch, or any other such instrument, in River Galway, Loughs Corrib or Mask, or their Tributaries.	Lisamore District, River Blackwater. (2nd Nov., 1870.)	Prohibiting the catching or attempting to catch Salmon, with any Drift Net of greater length than 220 yards in the tidal portion of the River Blackwater, situated in the Counties of Waterford and Cork.
Galway District, (11th Sept., 1866.)	Prohibiting the snatching or attempt to snatch Salmon in any Tidal or Fresh Water in the Galway District with any kind of Fish-hook, covered in part or in whole with any matter or thing, or uncovered.	Fergus River, (16th Dec., 1870.)	Prohibiting the use of Drift Nets in the Tidal parts of River Fergus, County Clare.
Clare and Clare-Galway or Turloughmore Rivers, Co. Galway. (22nd Dec., 1862.)	Prohibiting the use of Nets of any kind whatsoever in any part of the Rivers known as the Clare and the Clare-Galway or Turloughmore Rivers, in the County of Galway, above the junction of the said Rivers with Lough Corrib, in the County of Galway.	Erne River, (13th Feb., 1871.)	Permitting use of Nets with meshes of one inch from knot to knot in tideway of River Erne.
Owenmore River, Co. Mayo. (5th May, 1866.)	Prohibiting the removal of gravel or sand from any part of the bed of the Owenmore River, in the County of Mayo, where the spawning of Salmon or Trout may take place.	Waterville River, (18th Feb., 1871.)	Prohibiting use of Nets between Waterville Weir and mouth of River as defined, between twelve o'clock noon on Friday and six o'clock noon on Saturday morning, and between six o'clock Monday morning and twelve o'clock noon every day in each week during Open Season.
Owenduff or Ballycroy, Owenmore and Munhim Rivers. (11th Sept., 1866.)	Permitting the use of Nets with Meshes of one and a-half inches from knot to knot (to be measured along the side of the square, or six inches to be measured all round each such Mesh, such measurements being taken in the clear, when the Net is wet,) within so much of the said Rivers Owenduff or Ballycroy, Owenmore and Munhim, as lies above the mouth as defined, during so much of the Months of June, July, and August, as do now or at any time may form part of the Open Season for the capture of Salmon or Trout, with Nets, in the said Rivers.		
Sligo River, (1st March, 1870.)	Prohibiting the snatching or attempting to snatch Salmon in Sligo River, with any kind of Fish-hook covered in part or in whole, or uncovered.		

APPENDIX, No. 15—*continued*.ABSTRACT OF BY-LAWS, ORDERS, &c., in force on 1st January, 1872, relating to the
FISHERIES OF IRELAND.APPENDIX,
No. 15.Abstract of
By-Laws,
Orders, &c.

Place affected by By-Law, and Date thereof.	Nature of By-Law.	Place affected by By-Law, and Date thereof.	Nature of By-Law.
Lough Neagh, (20th Feb., 1871.)	Permitting pollen to be taken by trammel nets of one inch from knot to knot, between 1st February and 31st October.	Lee River, . . . (21st April, 1871.)	Prohibiting use of all Nets, except Landing-Nets, as auxiliary to rods and lines in part of South Channel between George IV Bridge and Friar's Weir.
River Foyle, (28th Feb., 1871.)	Permitting the use of Nets with meshes of one inch from knot to knot in Lough Foyle and tidal parts of River.	Moy River and Tri- butaries. (11th Feb., 1871.)	Prohibiting angling for Trout during April and May in each year—Loughs Conn and Cullen excepted.
Baronscourt Lakes and Streams. (22nd April, 1871.)	Permitting the use of Nets for the capture of fish, other than Salmon and Trout, with meshes of half an inch from knot to knot.	Maigne River, . . . (1st March, 1871.)	Prohibiting use of all Nets, except Landing-Nets as auxiliary to rod and line, above Railway- bridge below Adare.
Snave or Coomhola, Mealagh, or Dun- namark, Owvane, and Carrigboy Rivers. (21st June, 1871.)	Prohibiting use of all Nets, save Landing-Nets, as auxiliary to rods and lines in fresh-water por- tions of said Rivers.	Lough Doon, (24th March, 1871.)	Permitting use of Nets with meshes of half an inch from knot to knot, for capture of Fish.

APPENDIX, No. 16.

RIVERS, the TIDAL and FRESH WATER BOUNDARIES of which have been defined.

APPENDIX,
No. 16.

River.	Boundary.	Date.
Suir, . . .	A line drawn across river at and opposite to the most up-stream part of the Coolnamuck Weir,	16th March, 1864.
Nore, . . .	The Innistigue Bridge,	16th March, 1864.
Barrow, . . .	The lowest Weir or Dam used for navigation purposes, near St. Mullins, in county Carlow, .	16th March, 1864.
Shannon, . . .	The Weir or Dam known as the Corbally Mill Weir,	9th April, 1864.
Fergus, . . .	The Bridge commonly known as the New Bridge, immediately below the Club House, at Ennis,	9th April, 1864.
Liffey, . . .	The Weir or Dam on said river known as the Island Bridge Weir,	12th August, 1864.
Maigne, . . .	The Bridge across river immediately outside and seaward of the Adare Demesne, . . .	12th August, 1864.
Lee, . . .	The Weir or Dam at the Water Works of Cork, known as the Water Works Weir, . . .	12th August, 1864.
Bandon, . . .	The Bridge at Innoshannon, known as the Innoshannon Bridge,	19th January, 1865.
Carragh, . . .	The Carragh Bridge, being the bridge immediately seaward of the Salmon Weir, . . .	19th January, 1865.
Laune, . . .	The shallow at the head of the Pool, commonly called the Cat Pool,	26th July, 1865.
Maine, . . .	A straight line drawn across river at right angles with its course at the boundary between the townlands of Coolclieve and Ballyfinnane,	26th July, 1865.
Moy, . . .	The foot of the falls immediately below the Wehrs at Ballina,	26th July, 1865.
Inch, . . .	Adare Bridge,	1st February, 1866.
Slaney, . . .	Enniscorthy Bridge,	1st February, 1866.
Boyne, . . .	Eastern Point of Grove Island at Oldbridge,	8th April, 1868.
Eask, . . .	Foot Bridge above Donegal Bridge,	17th July, 1868.
Shimna, . . .	The Castle Bridge near Newcastle,	25th August, 1869.
Deel or Askeaton, .	Askeaton Bridge,	26th November, 1870.
Sligo or Garvogue,	The Mill Dam above Victoria Bridge, in town of Sligo,	11th February, 1871.
Fane, . . .	The Railway Bridge across said River,	16th May, 1871.
Owvane or Bally- lickey, . . .	The Ballylickey Bridge on the High Road,	10th June, 1871.
Glengariffe, . . .	Cromwell's Bridge,	10th June, 1871.
Mealagh or Dunna- mark, . . .	Wooden Bridge at Dunnamark Mill,	10th June, 1871.
Snave or Coomhola,	Snave Bridge,	10th June, 1871.
Carrigboy, . . .	Carrigboy Bridge,	10th June, 1871.
Adrigole, . . .	Adrigole Bridge,	10th June, 1871.

APPENDIX.
No. 17.

APPENDIX, No. 17.

LIST of LICENCES GRANTED to Plant OYSTER BEDS up to 31st December, 1871.

Date of Licence.	Persons to whom Granted.	Locality of Beds.	Area of Beds.		
			A.	R.	F.
1846,	5th November,	W. H. Carter, esq. . . .	19	1	11
	7th December,	Luke Lyons, esq. . . .	17	0	0
1848,	9th June,	F. H. Downing,	3	2	26
1849,	24th February,	R. T. Evanson,	19	0	10
1851,	5th February,	John Mahony, esq. . . .	165	2	0
	5th February,	Rev. Denis Mahony, . . .	147	2	0
1852,	17th November,	Thomas White, esq. . . .	132	1	26
	17th November,	John C. Garvey, esq. . . .	106	3	33
1853,	22nd September,	J. O. Woodhouse, esq. . .	63	0	26
1854,	1st July, . . .	Burton Bindon, esq. . . .	51	3	10
	15th November,	Hon. David Plunket, . . .	288	0	0
	15th November,	J. K. Boswell, esq. . . .	233	0	0
1855,	18th July, . .	John Richards, esq. . . .	90	0	0
1856,	30th July, . .	Lord Charles P. P. Clinton,	45	0	0
	21st August,	William Foreman, esq. . .	90	2	0
1857,	7th August,	Thomas Eccles, esq. . . .	9	1	0
1858,	15th February,	Rev. A. Magee,	277	0	0
	15th February,	A. C. Lambert, esq. . . .	114	0	0
1860,	3rd February,	Rev. R. H. Wall,	348	0	0
	3rd February,	Knight of Kerry,	78	0	0
	3rd February,	Captain W. Houston, . . .	43	0	0
	13th February,	William M'Cormick, esq. .	149	0	0
	11th May,	Edward Browne, esq. . . .	223	0	0
	4th October,	M. C. Cramer, esq. . . .	20	0	0
	9th October,	Ebenezer Pike, esq. . . .	47	0	0
	14th November,	William Pike, esq. . . .	1,676	0	0
1861,	10th January,	William Forbes, esq. . . .	225	0	0
1862,	14th February,	Robert W. C. Reeves, esq. .	112	0	0
	3rd March,	James Walker, esq. . . .	137	0	0
	6th March,	Edmund Power, esq. . . .	270	0	0
1863,	29th May, . .	George Clive, esq., M.P. .	489	0	0
1864,	2nd February,	Lord Fortescue,	83	0	0
	5th April,	Lord Wallscourt,	1,770	0	0
	10th June,	Colonel C. M. Vandeleur, M.P.	190	0	0
	10th June,	A. W. Wyndham, esq. . . .	80	0	0
	30th September,	Captain George Austin, . .	194	0	0
	31st October,	John Kendall, esq. . . .	236	0	0
	31st October,	Robert T. Atkins, esq. . .	25	0	0
	31st October,	R. E. L. Athy, esq. . . .	100	0	0
	31st October,	P. M. Lynch, esq. . . .	320	0	0
	11th November,	A. Boate, esq. . . .	65	0	0
	11th November,	J. R. Dower, esq. . . .	27	0	0
	31st December,	Captain W. F. Barry, . . .	68	0	0
	31st December,	C. P. Archer, esq. . . .	48	0	0
	31st December,	T. Young Prior, esq. . . .	90	0	0
	31st December,	P. Macauley, esq. . . .	150	0	0
	31st December,	Colonel F. A. K. Gore, . .	375	0	0
1865,	13th April,	Marquess of Sligo,	190	0	0
	13th April,	Sir Robert Gore Booth, . .	148	3	0
	29th April,	Right Hon. John Wynne, . .	190	0	0
	12th May, . .	Lord Baron Ventry,	130	0	0
	2nd November,	Law Life Assurance Society,	118	0	0
	2nd November,	Marquess of Sligo,	26	0	0
	1st December,	Most Rev. Dr. M'Hale, . . .	125	0	0
	1st December,	Thomas M'Carthy Collins, esq.	75	0	0
	1st December,	Marquess of Sligo,	26	0	0
	1st December,	John Obins Woodhouse, esq.	54	0	0
	1st December,	Captain Acheson,	18	0	0
	1st December,	Richard J. Verschoyle, esq.	54	0	0
	1st December,	Richard Mahony, esq. . . .	30	0	0
	1st December,	Mr. Robert M'Keown, . . .	61	0	0
1866,	20th April,	William Dargan, esq. . . .	70	0	0
	20th April,	Marquess of Sligo,	270	0	0
	21st April,	Miss Anne Fowler,	11	0	0
	4th June,	John Obins Woodhouse, esq.	42	0	0

APPENDIX, No. 17—concluded.

APPENDIX,
No. 17.

LIST of LICENCES GRANTED to Plant OYSTER BEDS up to 31st December, 1871.

Date of Licence.		Persons to whom Granted.	Locality of Beds.	Area of Beds.		
				A.	R.	P.
1867,	15th June,	Sir Robert Gore Booth, bart.	Drumcliff Bay, county Sligo,	87	0	0
	10th July,	Horatio Hamilton Townsend, esq.	Skull Harbour, county Cork,	230	0	0
	10th July,	Thomas Sandes, esq.	River Shannon, county Kerry,	780	0	0
	10th July,	Mrs. Elizabeth Atkinson,	Blacksod Bay, county Kerry,	100	0	0
	10th July,	M. J. C. Longfield, esq.	Roaringwater Bay, county Cork,	310	0	0
	10th July,	Thomas Kirkwood, esq.	Saleen Harbour, county Mayo,	17	0	0
	10th July,	Richard D. Kane, esq.	Howth Strand, county Dublin,	36	0	0
	10th July,	William & J. St. George, esqrs.	Galway Bay, county Galway,	810	0	0
	10th July,	Christopher T. Redington, esq.	Galway Bay, county Galway,	650	0	0
	10th July,	Mrs. Elizabeth Bury,	Lough Mahon, county Cork,	70	0	0
	10th July,	Rev. Nicholas Martin,	Trawbreaga Bay, county Donegal,	90	0	0
	15th July,	John Smyth, esq.	Midleton River, county Cork,	10	2	0
	15th July,	Stephen E. Collis, esq.	River Shannon, county Kerry,	212	0	0
	15th July,	Thomas Hicks, esq.	Roaringwater Bay, county Cork,	45	0	0
	16th July,	Robert W. C. Reeves, esq.	River Shannon, county Clare,	30	0	0
	24th July,	Francis J. Graham, esq.	Barnaderg Bay, county Galway,	90	0	0
1868,	31st January,	William Hart, esq.	Lough Swilly, county Donegal,	790	0	0
	11th February,	Richard Lyons, esq.	Midleton River, county Cork,	15	0	0
	11th February,	Charles Sandes, esq.	River Shannon, county Kerry,	56	0	0
	13th March,	Stephen Browne, esq.	Dunmanus Bay, county Cork,	9	0	0
	13th March,	Colonel Edward Cooper,	Ballisodare Bay, county Sligo,	190	0	0
1869,	13th February,	Henry Herbert,	Kenmare Bay,	20	0	0
	13th February,	Earl of Bantry,	Adrigole Harbour,	18	0	0
	13th February,	Earl of Bantry,	Glengariffe Harbour,	60	0	0
	4th March,	John P. Nolan,	Ard Bay,	290	0	0
	11th March,	Richard J. Mahony,	Kenmare Bay,	46	0	0
	11th March,	Thomas Kingston Sullivan,	Kenmare Bay,	195	0	0
	15th March,	John W. Payne,	Bantry Bay,	51	0	0
	14th June,	John W. Stratford,	Killala Bay,	31	0	0
	14th June,	Mrs. Catherine Browne,	Courtmacsherry Bay,	60	0	0
	14th June,	William Little,	Killala Bay,	190	0	0
	10th September,	Lord Clermont,	Carlingford Lough,	46	0	0
	10th September,	Henry W. Meredith,	Sligo Bay,	20	0	0
	10th September,	Owen Wynne,	Sligo Bay,	77	0	0
	10th September,	Owen Wynne,	Sligo Bay,	53	0	0
1870,	12th March,	R. J. Verschoyle,	Ballisodare Bay,	13	2	0
1871,	22nd March,	Earl of Bantry and T. J. Leahy.	Berehaven,	122	0	0
	27th March,	Earl of Bantry,	Ardgroom Harbour,	240	0	0
	27th March,	Thomas Hicks,	Roaringwater Bay, county Cork,	30	0	0
	22nd April,	Agnes M. Nicholson,	Sligo Bay,	52	2	10
	24th April,	Ed. Park,	Milk Haven, county Sligo,	22	0	0
	24th April,	Martin Cunnawn,	Milk Haven, county Sligo,	2	2	10
	24th April,	Michael Cunnawn,	Milk Haven, county Sligo,	2	1	10
	1st July,	Arthur Hamill, esq., q.c.	Carlingford Lough, county Louth,	144	0	0
	15th July,	Sir James Stewart, bart.	Lough Swilly, county Donegal,	106	2	21
	27th July,	F. Mansfield, esq.	Lough Swilly, county Donegal,	25	1	0
Total,				11,696	0	35

APPENDIX,
No. 18.
Certificates
for Fixed
Engines.

APPENDIX, No. 18.

CERTIFICATES granted up to 31st December, 1871, for Fixed Engines for fishing for Salmon or Trout.

No.	Place.	Name of Person to whom Certificate granted.	Date of Certificate.	District in which Net situated.	Description of Fixed Net.	Particulars of Size, &c.	Observations.
1	Sea off co. Londonderry.	Henry O'Neill.	31 August, 1865.	Coleraine.	1 Bag Net.	Net, 138 yards—first pole from shore, 12 yards; last do., 150 yards.	Ballyelagh net.
2	Ditto, Antrim.	A. G. Fullerton.	5 September, 1865.	Ballycastle.	1 Ditto.	Leader, 72 yards; net, 20 yards.	Larrybane net.
3	Ditto.	Ditto.	Ditto.	Ditto.	1 Ditto.	Leader, 50 yards; net, 20 yards.	Carriekraidie net.
4	Kennmare River.	E. B. Harrop.	16 January, 1866.	Kennmare.	1 Ditto.	Leader, 24½ feet; net, 54 feet.	Rath.
5	Sea off co. Antrim.	Thomas Black.	2 October, 1865.	Ballycastle.	1 Ditto.	Leader, 600 feet; net, 66 feet.	Curran net.
6	Ditto.	Ditto.	Ditto.	Ditto.	1 Ditto.	Leader, 330 feet; net, 66 feet.	Big Duncan net.
7	Ditto.	Sir E. MacNaghten.	Ditto.	Ditto.	1 Ditto.	Leader, 246 feet; net, 84 feet.	Portbradden net.
8	Ditto.	Thomas Black.	Ditto.	Ditto.	1 Ditto.	Leader, 330 feet; net, 66 feet.	Skerryvan net.
9	Ditto.	Earl of Antrim.	Ditto.	Ditto.	1 Ditto.	Leader, 150 feet; net, 48 feet.	Torr net.
10	Ditto.	Thomas Black.	Ditto.	Ditto.	1 Ditto.	Leader, 240 feet; net, 66 feet.	Little Duncan net.
11	Ditto.	Ditto.	Ditto.	Ditto.	1 Ditto.	Leader, 288 feet; net, 66 feet.	Portneen net.
12	Ditto.	Ditto.	Ditto.	Ditto.	1 Ditto.	Leader, 330 feet; net, 66 feet.	Flagstaff net.
13	Ditto.	Sir Alan E. Bellingham.	28 October.	Drogheda.	1 Head Weir.	South side, 627 feet; east side, 204½ feet; Fish Pass south side, 3½ feet; open at end in river, 4½ feet.	Castlebellingham weir.
14	Ditto.	J. C. Anderson.	Ditto.	Ballycastle.	1 Bag Net.	Net, 316 feet; head, 63 feet.	Portliff net.
15	Ditto.	Ditto.	Ditto.	Ditto.	1 Ditto.	Ditto.	Portneen net.
16	Ballycotton Bay.	John Litton.	31 October.	Lismore.	1 Ditto.	27½ feet.	Ballycotton net.
17	River Shannon.	William E. Barrington.	7 November.	Limerick.	1 Fly Net.	W air, 190 feet; H. W. M. to in-pole, 90 feet.	Shannon Lawn weir.
18	Sea off co. Louth.	John F. Jones.	16 November.	Drogheda.	1 Bag Net.	Leader, 360 feet; bag, 42 feet; first pole, 300 feet from fixed point on shore.	Drighenstown net.
19	Barrow, otherwise Suir, Nore, and Barrow conjoined.	Lord Templemore.	4 December.	Waterford.	1 Head Weir.	Shore wing, 225 feet; channel wing, 94 feet; space between shore wing and rock, 45 feet.	Buttermilk Castle weir.
20	Lough Foyle.	The Irish Society.	1866.	Londonderry.	1 Stake Net.	In-pole of Shore Leader to outer pole of same, 153 feet; out-pole of do. to do. of Ebb Leader, 82 feet; out-pole of chambers of net channelwards, 17 feet.	The Crook weir.
21	Ditto.	Ditto.	Ditto.	Ditto.	1 Ditto.	In-pole of Shore Leader to outer pole of same, 136 feet; out-pole of do. to do. of Flood Leader, 112 feet; out-pole of chambers of net channelwards, 22 feet.	The Shell Rock weir.
22	Ditto.	Ditto.	Ditto.	Ditto.	1 Ditto.	In-pole of Shore Leader to outer pole of same, 262 feet; out-pole of do. to do. of Flood Leader, 182 feet.	The Chapel Brook weir.
23	River Erne.	Alicia Shell.	20 January.	Donegal.	1 Ditto.	Land arm, 210 yards flood.	Erne weir.
24	River Shannon.	S. Cunningham.	16 March.	Clare.	1 Ditto.	Wing, 42 yards; ebb wing, 44 yards.	Aylerebeg weir.
25	River Bunnatty.	Thomas Studdert.	1867.	Limerick.	1 Head Weir.	138 feet; 18 feet eye.	Bunnatty weir.
26	Ringabella Bay.	Samuel Hodder.	11 February.	Cork.	1 Bag Net.	Leader, 240 feet; length of net, 27 feet.	Ringabella net.
27	Sea off co. Sligo.	Ormsby Jones.	7 March.	Sligo.	1 Ditto.	Leader, 110 yards; length of net, 20 yards.	Streedagh net.
28	River Blackwater.	John Neil and William Hennessy.	1868.	Lismore.	1 Stake Net.	185 feet, Leader.	Scart weir.
29	Sea off co. Sligo.	Lady Palmerston and Hon. W. Cowper.	14 January.	Sligo.	1 Bag Net.	866 feet, inner to outer pole.	Mullaghmore net.
30	Sea off co. Donegal.	George Young.	20 January.	Londonderry.	1 Ditto.	348 feet, inner to outer pole.	Claggan net.
31	Doonmore Strand.	John Scott.	27 April.	Limerick.	1 Salmon Weir or Wall.	680 feet.	Doonmore weir.
32	Doonbeg Strand.	W. Staapool.	19 May.	Ditto.	1 Ditto.	1,254 feet.	Doonbeg weir.
33	Sea off co. Donegal.	George Young.	19 May.	Londonderry.	1 Bag Net.	Leader, 270 feet; bag, 78 feet.	Bunnagee net.
34	Ditto.	Ditto.	Ditto.	Ditto.	1 Ditto.	Ditto.	Carriekadul net.

APPENDIX,
No. 18.
Certificates
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Engines.

35	Shannon.	William Cressagh Hickie,	8 February,	Limerick,	1 Stake net,	306 yards long.	Cloonan weir.
36	Ditto.	Colonel C. M. Vandeleur, M.P.,	Ditto.	Ditto.	1 Ditto.	The leader, 274 feet long; and head, 50 feet long and 19 feet wide.	Mount Shannon weir.
37	Clondra-law Bay,	Baron Anslay,	Ditto.	Ditto.	1 Ditto.	The first or shore leader, 167 yards long; the head 20 yards long and 14½ yards wide.	Millpark weir.
38	Ditto.	Ditto.	Ditto.	Ditto.	1 Ditto.	The second leader, 136 yards long; and the second head, 20 yards long and 14½ yards wide.	Lactnabhee weir.
39	Ditto.	Ditto.	Ditto.	Ditto.	1 Ditto.	The first or shore leader, 134 yards long; first head, 20 yards long and 14½ yards wide.	Lynche weir.
40	Ditto.	Ditto.	Ditto.	Ditto.	1 Ditto.	The second leader, 130 yards long; second head, 20 yards long and 14½ yards wide.	Lynch's Point weir.
41	Ditto.	R. W. C. Reeves,	Ditto.	Ditto.	1 Ditto.	The leader, 120 yards long, and the head 20 yards long by 14½ yards wide.	Park Ruseh weir.
42	Ditto.	Ditto.	Ditto.	Ditto.	1 Ditto.	The leader, 115 yards long, and the head 26 yards long and 7 yards wide.	Poulnagully weir.
43	Ditto.	Ditto.	Ditto.	Ditto.	1 Ditto.	The leader, 78 yards long, and the head 28 yards long and 12 yards wide.	Woodpoint weir.
44	Shannon.	Knight of Glin,	Ditto.	Ditto.	1 Ditto.	The leader, 80 yards long, and the head 28 yards long and 11 yards wide.	Long Rock weir.
45	Ditto.	C. H. Minchin,	Ditto.	Ditto.	1 Ditto.	The first leader, 492 feet long; first head 45½ feet. Second leader, 224 feet long; second head, 73½ feet. Third leader, 243 feet long; third head, 72 feet; and the fourth leader, 272½ feet long; fourth head, 73 feet.	Killacolla weir.
46	Waterford Harbour,	A. N. O'Neill,	Ditto.	Waterford,	1 Ditto.	Leader, 494 yards long; and head, 32 yards long.	Knockavellish weir.
47	Ditto.	Ditto.	Ditto.	Ditto.	1 Ditto.	The first leader, 383 yards long; and the second leader, 436 yards 1 foot long.	Woodtown weir.
48	Clondra-law Bay,	Col. H. Hickman,	Ditto.	Limerick,	1 Ditto.	The first leader, 552 yards long; second leader, 398 yards 1 foot long.	Kilmore Point weir.
49	Shannon.	John Griffin,	Ditto.	Ditto.	1 Ditto.	The first leader, 169 yards long; first head, 14 yards long.	Carrowbanebeg weir.
50	Carlingford Bay,	Earl of Antrim,	Ditto.	Ballycastle,	1 Bag net,	The first leader, 332 feet long; first head, 39 feet long and 15 feet wide. Second leader, 233 feet long; second head, 73 feet long and 16½ feet wide. Third leader, 183 feet long; head, 97 feet long and 17 feet wide.	Carlingford net.
51	King's Channel,	A. N. O'Neill,	Ditto.	Waterford,	2 Stake nets,	Lower weir—leader, 88 yards long; upper weir—leader, 33 yards long. The head or pocket of the former extending from west to east 34 yards in breadth, and the latter extending from west to east 53 yards.	King's Channel weirs (2).
52	Shannon.	Leslie Wren,	Ditto.	Limerick,	1 Ditto.	Entire length, 324 yards.	Carrigano weir.
53	Ditto.	Ditto.	Ditto.	Ditto.	1 Ditto.	Entire length, 167 yards.	Kylacallin weir.
54	Ditto.	Baron Montague,	Ditto.	Ditto.	1 Ditto.	Leader, 200 feet long; head, 84 feet long.	Foyne's Island (sth.) weir.
55	Ditto.	Ditto.	Ditto.	Ditto.	1 Ditto.	Leader, 187 feet long; head, 80 feet long, and 18 feet 6 inches wide.	Foyne's Island (nth.) weir.
56	Ditto.	Ditto.	Ditto.	Ditto.	1 Ditto.	The first leader, 398 feet long; first head 103 feet long and 14 feet wide. Second leader, 235 feet long; second head, 96 feet long and 19 feet wide.	Durnah weir.
57	Ditto.	Ditto.	Ditto.	Ditto.	1 Ditto.	The first leader, 300 feet long; first head, 40 feet long and 33 feet wide. Second leader, 210 feet long; second head, 93 feet long, 18 feet wide.	Mount Trenchard weir.
58	Ditto.	Thomas Sandes,	12 March,	Ditto.	1 Ditto.	Size—327 feet from high-water mark.	Coolanooagh weir.
59	Off coast, co. Antrim.	Sir E. W. Macnaghten, bart.,	2 May,	Ballycastle,	1 Bag net,	Leader, 95 yards long; head, 21 yards long.	Blackrock bag net.
60	Ditto.	Ditto.	Ditto.	Ditto.	1 Ditto.	Leader, 74 yards long; head, 21 yards long.	Glasban Island bag net.
61	Ditto.	Ditto.	Ditto.	Ditto.	1 Fixed draft net,	Length, 100 yards.	Gregganagh net.
62	Island of Achill,	Alexander Hector,	Ditto.	Bangor,	1 Bag net,	Leader, 150 yards long; head, 18 yards long.	Ballymacdary net.
63	Macmilligan Strand,	Sir H. H. Bruce, bart.,	Ditto.	Londonderry,	1 Ditto.	Leader, 315 yards long; head, 17 yards long.	Mullaghmore net.
64	Mullingmore,	Rt. Hon. W. Cowper Temple,	Ditto.	Sligo,	1 Fixed draft net,	Length, 120 yards long.	—
65	River Moy,	Mary Anne Little and Andrew Clarke,	Ditto.	Ballina,	6 Ditto.	6 nets, from 160 to 250 yards in length.	Ballycastle net.
66	Ballycastle Bay,	Sir H. H. Boyd, bart.,	Ditto.	Ballycastle,	1 Ditto.	Length, 100 yards.	Scurmore fixed nets.
67	Moy River,	J. W. Stratford,	18 May,	Sligo,	3 Ditto.	3 nets, not exceeding 80 yards in length.	Owenmore nets.
68	Owenmore River,	William Petrie,	Ditto.	Ditto.	1 Ditto.	Ditto, 120 ditto.	Tullaghan nets.
69	Owenmore and Ballycroy Rivers,	Helen Little,	19 May,	Ballina,	7 Ditto.	7 nets, not exceeding 120 ditto.	Moneyvart fixed draft net.
70	See off coast, co. Antrim,	Denis Black,	11 May,	Ballycastle,	1 Ditto.	Length, 300 feet.	Ballyteerim fixed net.
71	Ditto.	John Finlay,	Ditto.	Ditto.	1 Ditto.	Length, 80 yards.	Clarepark fixed net.
72	Ditto.	John McGilowaney,	Ditto.	Ditto.	1 Ditto.	Length, 104 yards.	Curryshakin fixed net.
73	Ditto.	H. H. McNeill,	Ditto.	Ditto.	1 Ditto.	Length, 90 yards.	Red Bay fixed draft net.
74	Red Bay.	Earl of Antrim,	Ditto.	Ditto.	1 Ditto.	Length, 116 yards.	Layd fixed draft net.
75	See off coast, co. Antrim,	Alexander Shuldham, A. W. White, and R. J. Broughton.	Ditto.	Ditto.	1 Ditto.	Length, 100 yards.	Crosreagh and Tullagh-murney nets.
76	See off coast, co. Londonderry,	John Cromie,	Ditto.	Ditto.	4 Ditto.	2—320 yards in length; and 2—140 yards in length.	Mullagbacall nets.
77	See off coast, co. Londonderry,	H. G. Murray Stewart,	Ditto.	Ditto.	3 Ditto.	2 nets, 150 yards long; and 1—122 yards long.	Muckross & Gortalia nets.
78	See off coast, co. Donegal,	William Sinclair,	13 May,	Ballyshannon,	2 Ditto.	2 nets, not exceeding 250 yards in length.	Liver nets.
79	Liver Bay,	Marquis Conyngham,	Ditto.	Ditto.	2 Ditto.	Length, 140 yards long.	Ballyederlane net.
80	See off coast, co. Donegal,	Sir J. Stewart, bart.,	Ditto.	Ditto.	1 Ditto.	Length, 136 yards.	Leenane net.
81	River Lennane (Estuary),	Lady Boyd, on behalf of Sir H. H. Boyd, bart.	11 May,	Lettickeny,	1 Ditto.	Length, 120 yards.	Kinlune net.
82	See off coast, co. Antrim,			Ballycastle,	1 Ditto.	Length, 90 yards.	

APPENDIX,
No. 18.
Certificates
for Fixed
Engines.

APPENDIX, No. 18.

CERTIFICATES granted up to 31st December, 1871, for Fixed Engines for fishing for Salmon or Trout—*continued.*

No.	Place.	Name of Person to whom Certificate granted.	Date of Certificate.	District in which Net situated.	Description of Fixed Net.	Particulars of Size, &c.	Observations.
83	Sea off coast, co. Donegal,	Ebenezer Bustard,	18 May,	1870.	1 Fixed draft net,	Length, 90 yards,	Drumbean net.
84	Sea off coast, co. Antrim,	J. E. Leslie,	11 May,	Ballyshannon,	1 Ditto,	Length, 75 yards,	Templestragh net.
85	Sea off coast, co. Mayo,	William Little,	8 June,	Ballina,	2 Bag nets,	Leader, 50 fathoms long each; and each bag about 7 feet wide,	Kilounamin bag nets.
86	Cork Harbour,	Sampson French,	28 September,	Cork,	1 Stake net,	Length, 60 yards,	Cuckinny net.
87	Shannon,	Robert Leslie,	16 January,	Limerick,	1 Stake net,	Length, 117 yards,	Tarbert net.
88	Ditto,	Ditto,	Ditto,	Ditto,	1 Ditto,	Length, 67 yards,	Kilpedogue net.
89	Ditto,	Thomas Sanders,	Ditto,	Ballyshannon,	1 Ditto,	Length, 32 yards,	Rahapane net.
90	River Erne,	R. L. Moore and others,	7 February,	Sligo,	3 Fixed draft nets,	Each 200 yards long,	—
91	Sligo River,	Abraham Martin,	20 February,	Londonderry,	2 Fixed draft nets,	Each not exceeding 135 yards length,	—
92	Macgilligan Strand,	Sir H. Bruce, bart.,	22 April,	Coleraine,	1 Fixed draft net,	Not exceeding 240 yards length,	—
93	Bann River,	The Irish Society,	15 February,	Ditto,	4 Fixed draft nets,	Not exceeding 240 yards length,	—
94	Macgilligan Strand,	James McGowery,	Ditto,	Ditto,	1 Fixed draft net,	160 yards long,	—
95	Ditto,	William Lorton,	Ditto,	Ditto,	1 Ditto,	150 yards long,	—
96	River Foyle,	The Irish Society,	Ditto,	Londonderry,	8 Fixed draft nets,	From 100 to 200 yards long,	—
97	Sea off coast, co. Antrim,	Earl of Antrim,	29 April,	Ballycastle,	1 Fixed draft net,	120 yards long,	Pier net.
98	River Blackwater,	Trustees, Provincial Bank,	15 February, 1872,	Lisamore,	1 Stake Weir,	Length of Shore-arm, 70 feet; body of Weir, 83 feet; Flood-arm, 15 feet; large yard, width, 18 feet; Fish pocket, width, 17 feet.	Stake weir.
99	Ditto,	Hon. C. W. Moore Smyth,	21 June, 1871,	Ditto,	1 Ditto,	Leader, 94 feet long; head, 108 feet—Ballinacrooy Weir,	Ballynacray weir.
100	Sea off coast, co. Antrim,	Denis Black,	19 July,	Ballycastle,	1 Fixed draft net,	Length, 100 yards,	Moneyvat, otherwise Fortvinegar, draft net.
101	Shannon,	Lord Annull,	10 November,	Limerick,	1 Stake net,	Leader, 110 yards long,	River weir.
102	Ditto,	Ditto,	Ditto,	Ditto,	1 Ditto,	Leader, 70 yards long,	Bally weir.
103	Ditto,	R. W. C. Reeves,	11 November,	Ditto,	1 Ditto,	Leader, 105 yards long; head, 26 yards, and 8 wide,	Ponbadaroo weir.
104	Ditto,	Colonel Vandeleur,	10 November,	Ditto,	1 Ditto,	Leader, 69 yards long; head, 7 yards long,	Aylvarroo or Ballynote west weir.
105	Ditto,	Ditto,	11 November,	Ditto,	2 Stake Nets,	E. Weir, leader, 78 yards long; head, 17 yards—Weir leader, 95 yards long; 8 heads each, 17 yards long.	Carrowdotis eastern and western weirs.
106	Ditto,	Ditto,	Ditto,	Ditto,	1 Stake Net,	Leader, 90 yards long; head, 17 yards long,	Colmanstown weir.
107	Ditto,	Benjamin Cox,	Ditto,	Ditto,	1 Ditto,	5 leaders each, 120 yards, and 5 heads, each 17 yards long,	Clarefield weir.

APPENDIX, No. 19.

APPENDIX,
No. 19.

RETURN of FISH conveyed to Limerick by the Limerick and Foynes Railway Company, during the year ending 31st December, 1871.

Stations.	Salmon and Trout.		White or Coarse Fish.		Weight.
	Boxes.	Baskets.	Boxes.	Baskets.	
Foynes,	1,944	—	—	—	Tons. cwt. qrs. lbs. 181 3 3 0

RETURN of FISH conveyed by the Waterford and Limerick Railway Company, during the year ending 31st December, 1871.

Stations.	Salmon and Trout.		White Fish.		Weight.
	Boxes.	Baskets.	Boxes.	Baskets.	
Caher,	—	No particulars given.	—	—	Tons. cwt. qrs. lbs. 13 10 0 4
Clonmel,	25	135	—	—	7 12 1 14
Kilsheelan,	—	3	—	—	0 0 2 10
Carrick,	—	165	—	—	5 17 1 1
Limerick,	823	578	253	—	109 7 3 5
Waterford,	12	55	12	226	35 13 0 4
	860	936	265	226	172 1 0 10

RETURN of FISH conveyed by the Passenger Trains of the Belfast and Northern Counties Railway Company during the Year ending 31st December, 1871.

Stations.	Salmon and Trout.		White or Coarse Fish.		Weight.
	Boxes.	Baskets.	Boxes.	Baskets.	
Belfast,	—	—	1,621	13	Tons. cwt. qrs. lbs.
Carrickfergus,	—	—	—	1,595	
Larne,	57	47	29	48	
Antrim,	894	87	59	—	
Toome,	20	333	4,546	—	
Moneymore,	—	—	213	4	
Cookstown,	—	—	37	3	
Ballymoney,	1	—	63	81	
Coleraine,	614	19	36	48	
Portstewart,	81	—	88	8	
Portrush,	797	7	905	20	
Bellerever,	130	2	17	15	
Londonderry,	1,527	—	—	—	
Total,	4,121	495	7,614	1,835	

RETURN of FISH conveyed over their Lines by the Irish North-Western Railway Company during the Year ending 31st December, 1871.

Stations.	Salmon.		White or Coarse Fish.		Total Weight.
	Tons. cwt. qrs. lbs.		Tons. cwt. qrs. lbs.		
January,	—		4 7 0 2		
February,	0 2 2 6		1 15 3 0		
March,	0 0 3 4		1 1 2 0		
April,	0 1 0 0		1 10 3 4		
May,	50 9 3 20		1 7 0 0		
June,	51 10 2 6		1 5 0 0		
July,	66 1 1 14		0 7 2 0		
August,	4 4 2 19		1 1 1 0		
September,	—		7 4 0 0		
October,	—		10 9 0 21		
November,	—		14 6 2 25		
December,	—		9 7 0 15		
Total,	172 10 3 13		54 2 3 11		226 13 2 24

APPENDIX,
No. 19.

APPENDIX, No. 19—continued.

RETURN of FISH conveyed from the undermentioned Stations of the Dublin and Belfast Junction Railway Company, during the Year ending 31st December, 1871.

Stations.	Salmon and Trout.		Herrings.		Weight.
	Boxes.	Baskets.	Boxes.	Barrels.	
					Tons. cwts. qrs. lbs.
Dundalk,	30	24	—	—	1 16 2 2
Castlebellingham,	60	78	—	—	5 2 2 13
Dunleer,	110	—	—	—	4 8 0 7
Drogheda,	—	—	162	472	50 0 0 0
Total,	200	102	162	472	61 7 0 22

RETURN of the WEIGHT of all FRESH FISH conveyed over the Great Southern and Western Railway, and the Cork, Youghal, and Queenstown section, for the Year ending 31st December, 1871.

Description of Fish.	Tons.	Description of Fish.	Tons.
Salmon,	150	Flat-fish,	25
Cod,	1	Eels,	9
Haddock,	4	Sprats,	72
Herrings,	519	Fresh Fish not named,	358
Shell-fish,	235		
Mackerel,	409	Total,	1,786
Hake,	4		

RETURN of FISH conveyed by the Enniskillen, Bundoran, and Sligo Railway Company, during the Year ending 31st December, 1871.

Stations.	Salmon and Trout.		White or Coarse Fish.		Weight.
	Boxes.	Baskets.	Boxes.	Baskets.	
					Tons. cwts. qrs. lbs.
From Irvinestown,	—	—	—	—	—
„ Kesh,	—	—	—	—	—
„ Pettigo,	—	—	—	—	—
„ Castlecaldwell,	—	—	—	—	—
„ Belleek,	—	—	Eels. 492	—	36 3 2 0
„ Ballyshannon,	—	—	1,516	—	151 18 1 8
„ Bundoran,	—	—	—	—	3 3 0 0
Total,	—	—	2,008	—	191 4 3 8

RETURN of FISH conveyed to Dublin by the trains of the Midland Great Western Railway Company during the Year ending 31st December, 1871.

Stations.	Salmon and Trout.		White or Coarse Fish.		Weight.
	Boxes.	Baskets.	Boxes.	Baskets.	
					Tons. cwts. qrs. lbs.
From Galway,	380	18	1,665	1,483	292 10 3 18
„ Sligo,	290	32	430	150	77 9 1 9
„ Ballisodare,	332	1	—	—	32 14 1 20
„ Westport,	176	149	—	—	25 16 3 0
„ Ballina,	595	—	—	—	55 6 0 22
„ Foxford,	85	14	—	—	8 8 0 0
„ Castlebar,	16	—	—	—	1 5 0 20
„ Athenry,	1	—	—	—	0 0 3 14
„ Ballinasloe,	3	—	—	—	0 6 0 0
„ Oranmore,	—	10	—	41	1 3 0 0
Total,	1,878	224	2,095	1,674	494 17 2 19

APPENDIX, No. 19—continued.

RETURN of FISH conveyed by the Dublin, Wicklow, and Wexford Railway
for the Year ending 31st December, 1871.

Description of Fish.	Tons.	cwt.	qrs.
Coarse Fish,	47	19	3
Herrings,	972	15	1
Oysters,	936	6	2
Salmon,	7	5	2

RETURN of FISH conveyed to Dublin by the Dublin and Drogheda Railway Company, during
the Year ending 31st December, 1871.

	Salmon and Trout.		White or Coarse Fish.		Weight.			
	Boxes.	Baskets.	Boxes.	Baskets.				
	35	124	—	—	Tons.	cwt.	qrs.	lbs.
	—	—	1,149	2,713	12	12	0	0
	27	427	—	—	394	12	0	0
					17	2	0	0
Total,	62	551	1,149	2,713	424	6	0	0

RETURN of FISH conveyed to Dublin by the Railway of the Athenry and Ennis Junction Company,
during the Year ending 31st December, 1871.

Station and Dates.	Salmon and Trout.		White or Coarse Fish.		Weight.			
	Boxes.	Baskets.	Boxes.	Baskets.				
From Ennis—February to December,	—	46	—	3	Tons.	cwt.	qrs.	lbs.
					1	2	0	0

RETURN of FISH conveyed to Bristol by the Bristol General Steam Navigation Company, during
the Year ending 31st December, 1871.

Dates.	Salmon and Trout.		White or Coarse Fish.	
	Boxes.	Baskets.	Boxes.	Barrels.
June 13,	—	—	—	4
„ 27,	—	—	—	26
„ „	—	—	—	26
July 4,	—	—	1	16
„ 11,	—	—	—	8
„ 25,	—	—	—	8
Aug. 1,	—	—	—	30
„ 8,	—	—	49	29
„ 15,	—	—	—	19
„ 22,	—	—	—	17
„ 29,	—	—	—	22
Sept. 5,	—	—	—	30
„ 12,	—	—	—	30
Total,	—	—	50	265

APPENDIX TO THE REPORT OF THE

APPENDIX,
No. 19.

APPENDIX, No. 19—continued.

RETURN of FISH conveyed to Ardrossan by the Belfast, Bristol, Whitehaven, and Stranraer Steam Ship Company, during the year ending 31st December, 1871.

Dates.	Salmon and Trout.		White or Coarse Fish.		Weight.			
	Boxes.	Baskets.	Boxes.	Barrels.	Tons.	cwts.	qrs.	lbs.
July 24,	—	—	—	15	1	10	0	0
" 26,	—	—	4	5	0	17	2	14
" 28,	—	—	—	13½	0	19	2	0
" 31,	—	—	—	10	0	15	0	0
Aug. 2,	—	—	—	12	0	18	0	0
" 4,	—	—	—	2	0	3	2	0
" 11,	—	—	—	4	0	8	0	0
" 18,	—	—	—	3	0	6	0	0
" 30,	—	—	—	37	2	18	0	0
Sept. 1,	—	—	2	9	0	16	0	0
" 4,	—	—	—	7	0	19	0	0
" 11,	—	—	—	15	1	2	2	0
" 18,	—	—	—	2	0	2	2	0
" 30,	—	—	1	—	0	3	2	0
Oct. 1,	—	—	—	19	1	9	2	0
" 4,	—	—	—	29	2	3	2	0
" 11,	—	—	—	23	2	19	2	0
" 18,	—	—	—	7	0	11	2	0
" 25,	—	—	—	4	0	14	0	0
" 31,	—	—	—	7	0	11	0	0
Nov. 7,	—	—	—	7	0	12	1	0
" 14,	—	—	—	2	0	3	0	0
" 21,	—	—	1	13	1	19	0	0
" 28,	—	—	16	1	1	7	0	0
Dec. 5,	—	—	—	15	1	6	0	0
" 12,	—	—	—	7	0	12	0	0
" 19,	—	—	—	3	0	4	2	0
" 26,	—	—	—	4	0	7	0	0
" 31,	—	—	8	4	1	0	0	0
Total,	—	—	—	7	0	12	0	0
Oct. 4,	—	—	—	3	0	5	0	0
" 11,	—	—	—	11	0	19	0	0
" 18,	—	—	—	4	0	7	0	0
" 25,	—	—	—	9	0	9	0	0
" 31,	—	—	—	14	1	3	0	0
Nov. 7,	—	—	—	5	0	16	1	0
" 14,	—	—	—	2	0	2	0	0
" 21,	—	—	1	1	0	3	2	0
Total,	—	—	—	—	32	15	2	14

RETURN of FISH conveyed to Whitehaven and Bristol by the Belfast, Bristol, Whitehaven, and Stranraer Steamship Company, during the year ending 31st December, 1871.

Stations and Dates.				Tons.	cwts.	qrs.	lbs.
Whitehaven, February 8,	1 Cask Fish,	. . . . .		0	9	0	0
" " July 19,	1 Mat	" " " "		0	1	0	6
" " " " " " " "	5 Barrels " Herrings,	" " " "		—	—	—	—
" " " " " " " "	2 Boxes " " " "	" " " "		—	—	—	—
Bristol, April 26, "	1 Barrel " " " "	" " " "		0	3	1	0
Total,				0	13	1	6

RETURN of FISH conveyed to Glasgow from Moville by the Londonderry and Glasgow Company during the Year ending 31st December, 1871.

Dates.	Boxes.	Baskets.	Dates.	Boxes.	Baskets.
January 2,	21	1	April,	43	3
" 5,	7 large }	—	May,	27	4
" 9,	1 small }	—	June,	9	—
" 12,	4	—	July,	—	—
" 16,	13	—	August,	2	3
" 19,	6	—	September,	38	2
" 23,	23	—	October,	68	6
" 27,	26	—	November,	76	—
February,	23	2	December,	110	1
March,	102	3	Total,	611	25
	12	—			

APPENDIX, No. 19—*continued*.APPENDIX
No. 19.

RETURN of FISH conveyed to England by the Steamers of the London and North-Western Railway Company, during the Year ending 31st December, 1871.

Dates.	Salmon.		White or Coarse Fish.		Weight.			
	Boxes.	Baskets.	Boxes.	Baskets.				
January,	48	—	391	20	Tons. 44	cwts. 14	qrs. 0	lbs. 0
February,	72	—	390	35	44	15	0	0
March,	138	11	802	10	95	16	0	0
April,	189	20	970	76	119	14	0	0
May,	232	19	915	13	117	1	0	0
June,	708	3	2,874	423	405	4	0	0
July,	488	17	3,687	531	431	9	0	0
August,	97	5	5,000	126	511	17	0	0
September,	5	—	1,912	15	193	2	0	0
October,	90	—	2,843	14	293	15	0	0
November,	—	—	487	—	48	14	0	0
December,	—	—	388	15	39	16	0	0
Total,	2,067	75	20,659	1,278	2,345	17	0	0

ABSTRACT of the Quantity of SALMON, HERRINGS, MACKEREL, and COD, delivered at and sold in Billingsgate and Columbia Markets, London, consigned from the Irish Fisheries, from the 1st of January to the 31st of December, 1871, as far as can be ascertained.

BILLINGSGATE.

	No. of Boxes.
Salmon,	7,379
Herrings,	26,678
Mackerel,	24,331
Cod,	2,779
Total,	61,167

COLUMBIA.

	No. of Boxes.
Salmon,	25
Herrings,	83
Mackerel,	200
Cod,	2
Total,	310

ABSTRACT of the Quantity of SALMON, HERRINGS, MACKEREL, and COD, delivered at and sold in the following places, consigned from the Irish Fisheries in 1871, as far as can be ascertained.

Places.	Salmon.	Herrings.	Mackerel.	Cod.
	No. of Boxes.	No. of Boxes and Barrels.	No. of Boxes and Barrels.	No. of Boxes and Baskets.
Wolverhampton,	272	2,500	2,576	300
Sheffield,	802	6,000	1,897	666
Liverpool,	2,311	14,408	5,155	3,000
Birmingham,	1,305	11,000	1,748	900
Nottingham,	272	1,805	900	200
Bradford,	700	5,100	2,225	272
Manchester,	2,042	13,026	4,000	1,332
Leeds,	1,232	5,773	1,600	721

Substance of Queries issued to Boards of Conservators.	Replies received from Boards of Conservators.	
	1. DUBLIN.	
1. What is the general state of the Salmon Fisheries in this District?	1. Improving.	
2. Has the take of salmon throughout the district been more or less productive in 1871 than in 1870, and to what is attributed the increase or diminution?	2. About the same.	
3. What was the average price obtained for salmon last year by the captors? (This has no reference to price obtained by the dealers in salmon.) What was the highest price given for salmon last season? What was the lowest price?	3. 1s. to 1s. 6d. per lb. 8s. 6d. per lb. 8d. per lb.	
4. What proportion of the entire capture in your district is exported, and what proportion purchased for home consumption?	4. Very little is exported.	
5. What has been the amount of protection rendered during the present close season of 1871, as compared with preceding season of 1870?	5. About the same.	
6. Has the quantity of breeding fish observed in the rivers in your district been greater or less as compared with preceding year, 1870?	6. Greater.	
7. About what period do the salmon commence to spawn in the several rivers in your district? What are the greatest spawning months? and when is spawning over? and generally where are the most important spawning grounds situated?	7. 1st November. November and December. Spawning is generally over about Christmas-day. The most important spawning-grounds are from Ballymore-Eustace to Kilcullen.	
8. At what period of the year, in each river in your district, are the first clean fish taken? When do the grills begin to run? When are the spent fish well out of the river? and when does the great bulk of the fry go to sea?	8. January. June. 1st January. January and May.	
9. During the descent of the fry to the sea, is angling for trout prohibited by any of the proprietors of fisheries, or is it carried on during these months, and does much destruction of fry take place?	9. Angling, under pretence of trout and pike fishing, is practised throughout the year uninterfered with by the proprietors, and considerable quantities of fry are taken or destroyed, particularly in May.	
10. At what period of the year do the fish begin to be discoloured, or to get heavy in spawn; and what is the general opinion as to the proper season for angling in your district?	10. The salmon begin to be discoloured in the River Liffey in October, but in the River Vartry not until November. The general opinion is that so long as angling in salmon rivers can be carried on under pretence of perch and pike fishing, by-laws having reference solely to salmon, effect very little good.	
11. Have you reason to suppose that many spent fish have been destroyed hitherto in the month of February, and full fish in the month of October by anglers?	11. No.	
12. Are you aware of any change having taken place in regard to the period of the season when the salmon in your district is in best order, whether earlier or later than heretofore? If so, state particulars.	12. No.	
13. Has there been any increase in the average size of the spring salmon or the peel since 1868. Give average weight of salmon and peel in that year and in the season 1871, as far as practicable?	13. No. About 9 lb.	
14. Are there any pollutions or poisonous matter entering the rivers in your district? If so, state the particular cases.	14. Yes, the Gas and Chemical Works on the North and South Quays of the tideway of the River Liffey.	
15. Have offences against the Fishery Laws increased or diminished?	15. Fishing for salmon without licence with rods in the rivers, and draft-nets on the sea-coast, under pretence of fishing for other fish, is greatly on the increase.	
16. Give a list of the mill-weirs or dams, or other obstructions in each river in your district; and specify where ladders or fish passes have been built, when, and by whom?	16. See Appendix.	
17. State where fish passes would be practicable and advantageous?	17. Fish-passes would be practicable in almost every weir mentioned, but their advantage is rather doubtful unless there was a sufficient staff of water-bailiffs to prevent their being used as fish-traps. A fish-pass over Pollaphuca would give the River Liffey thirty additional miles of spawning-fords; however as this cascade is 154 feet high, and is at the head of a long incline, it would probably cost £1,000 to construct it.	
18. Give a list of all the fish ladders or passes built in your district, whether under the provisions of the Fishery Acts, or by the Board of Works or private individuals; and specify each locality.	18. At Island-bridge weir, at Newholland weir, at Lucan weir, at Salmon Leap cascade, and at Temple Mills weir. These fish-passes were constructed under the directions of the Messrs. Cane and Co., as private individuals.	
19. Have gratings been attached to mill-leads, or other artificial channels, in conformity with the 32 Vic., cap. 9; and, if so, specify the particular cases?	19. None.	
20. State the instances in which the provision has been partially carried out, specifying whether at the head or tail race?	20. None.	
21. State the instances and nature of precautions adopted at mills to prevent the destruction of fish, other than that prescribed by the late Act?	21. None.	
22. State where and by whom fixed engines were used in 1871?	22. None.	
23. State any instances where head and tail gratings, either or both, would be advantageous (specifying which), if erected?	23. The Conservators are of opinion that unless they had sufficient funds to engage a large staff of water-bailiffs to sentinel such gratings, their construction would be most detrimental to the salmon and trout fisheries, as from the rapid rise and fall of the rivers in this district, the gratings contemplated would lead to the destruction of the fish, either by detaining them after the subsidence of the water, where they would, if not removed by a caretaker into deep water, become the prey of otters; but more particularly in remote situations, the gratings would prove gigantic fish-traps unless closely watched. However, as the tail-race of the Royal Hospital pumping mill is in the tideway, and very much under public view, a grating on it would be of considerable benefit to the River Liffey.	
24. Can you give a list of the prosecutions instituted by the Conservators during the year 1871?	24. —	
25. Also give a list of prosecutions for fishery offences instituted by others, stating by whom?	25. —	
26. Are there any new modes of fishing for salmon adopted in your district? If so, describe them, and where used.	26. None.	
27. Number of water-bailiffs employed by Conservators?	27. Four.	
28. Number employed in district by private individuals?	28. Four.	
29. For what length of time employed?	29. For the year.	
30. Rate of wages paid by the Conservators?	30. From £32 to £10 per annum.	
31. Are there any suggestions or general observations with which the Conservators may be disposed to favour the Inspectors, with reference to the Salmon Fisheries in your district?	31. The Conservators are of opinion that the licensing of rods and nets should be extended to all such modes of fishing when used in salmon waters.	
32. Give the names of the rivers in your district frequented by salmon, and state how far up each river they ascend; and if prevented ascending further by artificial or natural obstructions, and of what character are these obstructions?	32. —	
33. Give the names of the rivers in your district not frequented by salmon; and if this is caused by natural or artificial obstructions, or from what cause?	33. —	

STATEMENTS from Boards of Conservators.

Replies received from Boards of Conservators.	
2. WEXFORD.	3. WATERFORD.
<p>1. Middling.</p> <p>2. Less; in consequence of the months of February and October having been taken off the anglers.</p> <p>3. From 4d. to 2s. per lb. 2s. 6d. per lb. 3½d. per lb.</p> <p>4. Almost all for home consumption.</p> <p>5. Much the same.</p> <p>6. Greater.</p> <p>7. November. December and January. The end of February. The Slaney, the Boro, the Urrin, the Bann, the Glasha, and Deering.</p> <p>8. March. November. End of April or beginning of March. April.</p> <p>9. No. It is believed that there may be some destruction to the fry from angling.</p> <p>10. October. From the 1st March to the 1st October.</p> <p>11. Yes.</p> <p>12. No change.</p> <p>13. Much the same.</p> <p>14. Not aware of any.</p> <p>15. Diminished.</p> <p>16. There is a weir on the Urrin, which is an obstruction; but Mr. Davis, St. John's, has put planks on it to assist the fish getting over.</p> <p>17. None in particular.</p> <p>18. There is a fish-ladder on the Urrin, at St. John's, built by Mr. Davis.</p> <p>19. Yes, to all mill-leads in this district, except Mr. James Warran, of Ardyston, county Carlow, who did not comply with Major Hayes's instructions.</p> <p>20. The instructions to the mill owners of this district have in all cases been carried out by them, excepting the foregoing case of Mr. Warran.</p> <p>21. None.</p> <p>22. None.</p> <p>23. Mr. James Warran, Ardyston, county Carlow, where head and tail gratings would be required.</p> <p>24. —</p> <p>25. —</p> <p>26. None.</p> <p>27. One Inspector and seven water-bailiffs.</p> <p>28. One.</p> <p>29. Inspector and three bailiffs during the year. One Inspector and seven bailiffs during the close season.</p> <p>30. To Inspector, 15s. per week; to one bailiff, 9s. per week; to one bailiff, 8s. per week; to one bailiff, 8s. 6d. per week, during the year round. During the close season, one Inspector, at 15s. per week; one bailiff, at 9s. per week; and six bailiffs, at 8s. per week.</p> <p>31. —</p> <p>32. The Slaney, Boro, Urrin, Blackwater, Bann, Glasha, Clody, Deering, Bonovara, Derry. The salmon ascend in high water almost to where the river rises, but would pass more freely were it not for mills and head weirs.</p> <p>33. None.</p>	<p>1. Satisfactory, and a large number of fish on the spawning beds.</p> <p>2. The take of salmon in the fresh waters was more productive in 1871 than in 1870, and in the tidal waters the reverse; the increase is attributed to there being a greater number of fish in the upper waters; the diminution, to the firing of artillery at Duncannon Fort, in the months of April, May, and June.</p> <p>3. About 1s. 6d. per lb. 2s. 6d. per lb. 10d. per lb.</p> <p>4. Nine-tenths at least. Home consumption very small in proportion.</p> <p>5. About the same.</p> <p>6. Much greater.</p> <p>7. October, November, December, and January, are the greatest spawning months. Spawning over in February. The most important spawning grounds are on the rivers Clodia, Anner, Nire, Tar, Aherlow, Argala, Arrow, &c.</p> <p>8. February. June, July, and August. In March. April and May, according to the weather.</p> <p>9. Angling for trout is not prohibited, the consequence is, that thousands of fry are killed. On the 7th of April, 1871, saw nine dozen fry killed by one rod fisher on the river Clodia.</p> <p>10. In September. Thinks general opinion is that angling should commence on the 15th of February, and end the 15th September.</p> <p>11. Numbers of spent fish have been destroyed in the upper waters in the months of February and March. No full fish destroyed in October; at least, very few.</p> <p>12. No change.</p> <p>13. In some instances there has been an increase in the weight of salmon, but cannot say there was an average increase. Average weight of salmon 12 lbs. Peel, from 5 to 8 lbs.</p> <p>14. None to signify.</p> <p>15. Think offences have decreased, and particularly as regards spawning fish.</p> <p>16. Mill-weirs at Clonmel; weirs at Cahir; Salmon Leap at Curraghmore. Mr. Going's weir, at Cahir; Mr. Parker's mill-weir, at Kilmacow; Mr. Collis's mill-weir, at Kilkenny.</p> <p>17. Clonmel, Sheestown, Ballyredden, Mr. Collis's weir, at Kilkenny.</p> <p>18. Two at Cahir; one at Portlaw.</p> <p>19. None.</p> <p>20. None.</p> <p>21. None.</p> <p>22. Two Scotch weirs at Woodstown, county Waterford, fished by Arthur O'Neill; two Scotch weirs at Knockboy, also fished by Arthur O'Neill; one box weir at Coolnamuck, fished by Arthur O'Neill; one box at Innistogue, fished by the Hon. Col. Tighe; one box at Jerpoint, fished by Mr. Doran; and one box, near Thomastown, fished by Mr. Carroll.</p> <p>23. Several mills at Clonmel and Cahir, Thomastown, Kilkenny, &c., &c.</p> <p>24. Cannot give a correct list of all the prosecutions instituted in this district, and beg leave to refer the Inspectors to the Petty Sessions Clerks for same.</p> <p>25. Cannot say.</p> <p>26. None.</p> <p>27. The number of water bailiffs varies according to the season of the year. At present there are about eighty employed.</p> <p>28. Very few, if any.</p> <p>29. Cannot say.</p> <p>30. Generally at the rate of 7s. 6d. to 10s. a week.</p> <p>31. Thinks the wholesale destruction of salmon fry by rod fishers should be put at stop to.</p> <p>32. Suir, Nore, Barrow, Anner, Clodia, Nire, Tar, Aherlow, Arrow, Glasha, Argala, Mullinderry River, &c., &c. Not aware of any obstructions beyond those given in answer to query No. 16.</p> <p>33. None.</p>

Substance of Queries issued to Boards of Conservators.	Replies received from Boards of Conservators.
	4. Lismore.
<ol style="list-style-type: none"> 1. What is the general state of the Salmon Fisheries in this district? 2. Has the take of salmon throughout the district been more or less productive in 1871 than in 1870, and to what is attributed the increase or diminution? 3. What was the average price obtained for salmon last year by the captors? (This has no reference to price obtained by the dealers in salmon.) What was the highest price given for salmon last season? What was the lowest price? 4. What proportion of the entire capture in your district is exported, and what proportion purchased for home consumption? 5. What has been the amount of protection rendered during the present close season of 1871, as compared with preceding season of 1870? 6. Has the quantity of breeding fish observed in the rivers in your district been greater or less as compared with preceding year, 1870? 7. About what period do the salmon commence to spawn in the several rivers in your district? What are the greatest spawning months? and when is spawning over? and generally where are the most important spawning grounds situated? 8. At what period of the year, in each river in your district, are the first clean fish taken? When do the grilse begin to run? When are the spent fish well out of the river? and when does the great bulk of the fry go to sea? 9. During the descent of the fry to the sea, is angling for trout prohibited by any of the proprietors of fisheries, or is it carried on during these months, and does much destruction of fry take place? 10. At what period of the year do the fish begin to be discoloured, or to get heavy in spawn; and what is the general opinion as to the proper season for angling in your district? 11. Have you reason to suppose that many spent fish have been destroyed hitherto in the month of February, and full fish in the month of October by anglers? 12. Are you aware of any change having taken place in regard to the period of the season when the salmon in your district is in best order, whether earlier or later than heretofore? If so, state particulars. 13. Has there been any increase in the average size of the spring salmon or the peel since 1868. Give average weight of salmon and peel in that year and in the season 1871, as far as practicable? 14. Are there any pollutions or poisonous matter entering the rivers in your district? If so, state the particular cases. 15. Have offences against the Fishery Laws increased or diminished? 16. Give a list of the mill-weirs or dams, or other obstructions in each river in your district; and specify where ladders or fish passes have been built, when, and by whom? 17. State where fish passes would be practicable and advantageous? 18. Give a list of all the fish ladders or passes built in your district, whether under the provisions of the Fishery Acts, or by the Board of Works or private individuals; and specify each locality. 19. Have gratings been attached to mill-leads, or other artificial channels, in conformity with the 32 Vic., cap. 9; and, if so, specify the particular cases? 20. State the instances in which the provision has been partially carried out, specifying whether at the head or tail race? 21. State the instances and nature of precautions adopted at mills to prevent the destruction of fish, other than that prescribed by the late Act? 22. State where and by whom fixed engines were used in 1871? 23. State any instances where head and tail gratings, either or both, would be advantageous (specifying which), if erected? 24. Can you give a list of the prosecutions instituted by the Conservators during the year 1871? 25. Also give a list of prosecutions for fishery offences instituted by others, stating by whom? 26. Are there any new modes of fishing for salmon adopted in your district? If so, describe them, and where used. 27. Number of water-bailiffs employed by Conservators? 28. Number employed in district by private individuals? 29. For what length of time employed? 30. Rate of wages paid by the Conservators? 31. Are there any suggestions or general observations with which the Conservators may be disposed to favour the Inspectors, with reference to the Salmon Fisheries in your district? 32. Give the names of the rivers in your district frequented by salmon, and state how far up each river they ascend; and if prevented ascending further by artificial or natural obstructions, and of what character are these obstructions? 33. Give the names of the rivers in your district not frequented by salmon; and if this is caused by natural or artificial obstructions, or from what cause? 	<ol style="list-style-type: none"> 1. Never worse in the upper waters; not as good as last year in the tideway and lower water. 2. Much less productive in 1871. Excessive netting in the tideway. 3. 1s. In the upper part of district 2s. 6d. Tideway 1s. 9d. 1s. 4. Nearly all exported. 5. Five men less paid by Board; four men extra paid by private individuals. Total extra bailiffs employed, one less than last year. 6. About the same. 7. Commence in October, November, and December. Over in January. Blackwater and its tributaries. Bride and Finisk. 8. The run of fish commences in February. About 16th of June. In March, about the 20th. In April. 9. No restriction. Not much in the fresh water; a good deal in spratt nets. 10. September and October. 11. Last year few spent fish were destroyed by anglers, and there was no fishing in October. I have reason to suppose large numbers of spent fish were taken in drift nets in the Blackwater, and in snap nets in the Bride. Spent fish hang in the tideway for a considerable time after leaving the fresh water. 12. About the same. 13. Something better. 14. None. 15. Decreased in the upper waters; increased in the tidal. 16. Mill weirs at Glandulane, Fermoy, and Gurteen, on the Blackwater. At Castletownroche, Danalstown and Doneraile, on the Owbeg; at Conna and Ahern, on the Bride; on the Dallow and Allon, at Kanturk. Fish passes have been built in the mill weirs at Glandulane and Fermoy, by Board of Conservators; the former, years ago, and is now almost useless. 17. At Glandulane, Castletownroche, Ahern, Gurteen, and Kanturk mill weirs. 18. At Glandulane and Fermoy mill weirs, in the Blackwater, under the Fishery Acts. 19. Gratings have been erected at the tail races of the following:—Glandulane, Fermoy, Kanturk, Gurteen, and Ahern mills. 20. No gratings have been erected at the head races of any of the mills. 21. None. 22. See Appendix. 23. Head gratings are required at all the mills when the spent fish are returning to the sea, and also during the descent of the fry. Head and tail gratings are very much required at Quartertown mills, on the Clyda, where great destruction of fish takes place. 24. — 25. — 26. Not aware of any. 27. Fifty-seven—eleven permanent men; forty-six extra men. 28. Four. 29. Eleven all the year. Three from February 14th to September 10th. Forty-three from two to three months. 30. Head bailiff in tideway, £40 per annum. Seven of regular staff, £26 each per annum. Three men in tideway during open season, 14s. each, per week. One extra man on upper waters, 10s. per week. Forty-five men, 8s. each, per week. The bailiffs also receive one-third of all penalties imposed by them. 31. That fishing boats should have their names and owners' names painted in large letters on the outside of their bows, and that fishing nets should have a number, or other mark affixed to them, which could be entered in the licence. 32. All the rivers in the district. Mr. Hickey's mill weir at Castletownroche prevents fish even in the highest floods, from ascending further up the Owbeg. 33. Owbeg, from Castletownroche up, about fourteen miles of river, caused by Mr. Hickey's mill weir.

INSPECTORS OF IRISH FISHERIES.

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STATEMENTS from Boards of Conservators—*continued.*

Replies received from Boards of Conservators.		
5. CORK.	6 ¹ . SKIBBEREEN.	6 ² . BANTRY.
1. Very much improved, owing to additional preservation.	1. The season was better than 1870, and anglers had a good season in the upper waters.	1. Should say improving.
2. A larger take in 1870, but more fish in the river in 1871.	2. More, caused by the wet season, when salmon can get up earlier.	2. More fish taken in 1870 with nets; the wet weather was much against net fishing in 1871, but very good in the rivers.
3. About 1s. 6d. per lb. About 8d. per lb.	3. 5½d. 5½d. 5½d.	3. 5½d. per lb. 6d. per lb. 5½d. per lb.
4. Nearly all.	4. About half for exportation.	4. Nearly all sent to Cork.
5. Nearly double, owing to the increase of licence to £1, and the assistance of the Anglers' Club.	5. Same.	5. About the same as last year.
6. Much greater.	6. Believed to be greater.	6. Much greater, on account of the nets being stopped in the rivers.
7. Early in November in the upper waters. In the end of January. The upper part of the Lee and Sullane.	7. November. December. Close to Skibbereen, and the only ones well protected are in the tideway.	7. About the 1st of November. November and December are the greatest.
8. Some taken in February. About June. About end of February. April.	8. Early in May, but the great run in July. April. April.	8. About the 1st of May. In February. In the month of April.
9. No. Yes, very much.	9. It is carried on, and quantities of fry are destroyed.	9. Angling is not prohibited by the proprietors in this district, or carried on to any extent during the descent of the fry to the sea.
10. End of October. The present season for rods and nets answers very well, and it is the opinion of the Conservators that it would be best to let remain as at present.	10. Middle of October, but if the season was altered the anglers would have little fishing, as October is the only month any good, except in an unusually wet summer like the past.	10. In October Angling may be carried on up to the 1st of November.
11. Not a great many by anglers. Very few.	11. Nobody ever fishes while the spent fish are in the river, as they have no excuse for so doing, as new salmon are never seen before July. Many full fish are killed in October.	11. Spent fish are never taken; some full fish are taken in October.
12. No alteration that I am aware of.	12. No change from former years.	12. None whatever.
13. Average in 1868, 7 lbs.; in 1871, 9 lbs.	13. No change in size; all the fish taken average 6 lbs.	13. The same.
14. None.	14. None, except flax.	14. None, only the Snaive or Comhols was poisoned by poachers.
15. Very much diminished in the past year.	15. Increased. No adequate protection. Poachers are regularly organized, and poach in large bodies; nothing less than half a dozen men would be any use, and they must be well armed.	15. Increased.
16. No weirs that interfere with fish except the Water-works and Carrigrohane.	16. One weir. A pass has been made in it, which pass is the only obstruction in the weir; all other parts are easy of access in high water.	16. None.
17. At the Water-works and Carrigrohane.	17. —	17. At Dunnamark falls.
18. There are only two passes, one at the Water-works, which is of no use; the other at Ballincollig, which is a good one.	18. —	18. None.
19. None, with the exception of the Water-works.	19. Yes, one; on the only mill on the Ilan.	19. At Carrigboy.
20. In no case, with the one exception, Water-works.	20. Head and tail race.	20. —
21. None.	21. —	21. —
22. See Appendix.	22. —	22. None.
23. At Carrigrohane mills, and Ballincollig mills, and Crookstown mills.	23. —	23. —
24. There were very few, and mostly all went to gaol.	24. —	24. —
25. A few under the Anglers' Club.	25. —	25. —
26. No.	26. No.	26. None.
27. Twenty-one under the Board. Nine or ten under Anglers' Club.	27. One, up to November; but as it was found useless to have but one, he was discharged.	27. Three.
28. About eight.	28. One, up to October, by Fishing Association.	28. Two, by the Earl of Bantry.
29. Nine or ten on all the year; rest from October to 1st February.	29. See No. 27.	29. From June to January.
30. 12s. and 10s. per week.	30. 10s. per week.	30. 5s. per week.
31. In no case to open net fishing earlier than at present, as it would prove ruinous to the river.	31. —	31. —
32. —	32. Ilan, nine miles; Rowny, three miles; Crooked Bridge River, four miles; Ballydehob River, five miles.	32. Ouvane or Ballylickey, Dunnamark, Carrigboy, Glengariffe, and Snaive.
33. Salmon can ascend all the tributaries to the River Lee.	33. None.	33. —

Substance of Queries issued to Boards of Conservators.	Replies received from Boards of Conservators.
	6 th . KENMARE.
<p>1. What is the general state of the Salmon Fisheries in this district?</p> <p>2. Has the take of salmon throughout the district been more or less productive in 1871 than in 1870, and to what is attributed the increase or diminution?</p> <p>3. What was the average price obtained for salmon last year by the captors? (This has no reference to price obtained by the dealers in salmon.) What was the highest price given for salmon last season? What was the lowest price?</p> <p>4. What proportion of the entire capture in your district is exported, and what proportion purchased for home consumption?</p> <p>5. What has been the amount of protection rendered during the present close season of 1871, as compared with preceding season of 1870?</p> <p>6. Has the quantity of breeding fish observed in the rivers in your district been greater or less as compared with preceding year, 1870?</p> <p>7. About what period do the salmon commence to spawn in the several rivers in your district? What are the greatest spawning months? and when is spawning over? and generally where are the most important spawning grounds situated?</p> <p>8. At what period of the year, in each river in your district, are the first clean fish taken? When do the grilse begin to run? When are the spent fish well out of the river? and when does the great bulk of the fry go to sea?</p> <p>9. During the descent of the fry to the sea, is angling for trout prohibited by any of the proprietors of fisheries; or is it carried on during these months, and does much destruction of fry take place?</p> <p>10. At what period of the year do the fish begin to be discoloured, or to get heavy in spawn; and what is the general opinion as to the proper season for angling in your district?</p> <p>11. Have you reason to suppose that many spent fish have been destroyed hitherto in the month of February, and full fish in the month of October by anglers?</p> <p>12. Are you aware of any change having taken place in regard to the period of the season when the salmon in your district is in best order, whether earlier or later than heretofore? If so, state particulars.</p> <p>13. Has there been any increase in the average size of the spring salmon or the peel since 1868. Give average weight of salmon and peel in that year and in the season 1871, as far as practicable?</p> <p>14. Are there any pollutions or poisonous matter entering the rivers in your district? If so, state the particular cases.</p> <p>15. Have offences against the Fishery Laws increased or diminished?</p> <p>16. Give a list of the mill-weirs, or dams, or other obstructions in each river in your district; and specify where ladders or fish passes have been built, when, and by whom?</p> <p>17. State where fish passes would be practicable and advantageous?</p> <p>18. Give a list of all the fish ladders or passes built in your district, whether under the provisions of the Fishery Acts, or by the Board of Works or private individuals; and specify each locality.</p> <p>19. Have gratings been attached to mill-leads, or other artificial channels, in conformity with the 32 Vic., cap. 9; and, if so, specify the particular cases?</p> <p>20. State the instances in which the provision has been partially carried out, specifying whether at the head or tail race?</p> <p>21. State the instances and nature of precautions adopted at mills to prevent the destruction of fish, other than that prescribed by the late Act?</p> <p>22. State where and by whom fixed engines were used in 1871?</p> <p>23. State any instances where head and tail gratings, either or both, would be advantageous (specifying which) if erected?</p> <p>24. Can you give a list of the prosecutions instituted by the Conservators during the year 1871?</p> <p>25. Also give a list of prosecutions for fishery offences instituted by others, stating by whom?</p> <p>26. Are there any new modes of fishing for salmon adopted in your district? If so, describe them, and where used.</p> <p>27. Number of water-bailiffs employed by Conservators?</p> <p>28. Number employed in district by private individuals?</p> <p>29. For what length of time employed?</p> <p>30. Rate of wages paid by the Conservators?</p> <p>31. Are there any suggestions or general observations with which the Conservators may be disposed to favour the Inspectors, with reference to the Salmon Fisheries in your district?</p> <p>32. Give the names of the rivers in your district frequented by salmon, and state how far up each river they ascend; and if prevented ascending further by artificial or natural obstructions, and of what character are these obstructions?</p> <p>33. Give the names of the rivers in your district not frequented by salmon; and if this is caused by natural or artificial obstructions, or from what cause?</p>	<p>1. Very good.</p> <p>2. Less productive—this has been caused partly by the constant floods which enabled the fish to escape the tidal salmon nets on their way to the spawning grounds.</p> <p>3. 6½d. per lb. 1s. 4d. per lb. 6d. per lb.</p> <p>4. About 5 per cent. consumed in the district, all the rest exported.</p> <p>5. Double protection.</p> <p>6. Vastly greater.</p> <p>7. Salmon commence to spawn about 15th November. December is the principal spawning month. Spawning is over about 20th January. The most important spawning grounds are in the Roughty, Blackwater, Sheen, and Clonee Rivers.</p> <p>8. In April. About the middle of June. About 1st March. In May.</p> <p>9. Angling is not prohibited; a good many fry are destroyed.</p> <p>10. About the 1st of November.</p> <p>11. Not many.</p> <p>12. About the same time.</p> <p>13. Yes. The average weight of salmon in 1868 was about 8 lbs. and peel 6 lbs.; this year the average weight of salmon was 10 lbs., and peel 7½ to 7¼ lbs.</p> <p>14. None.</p> <p>15. About the same as last year.</p> <p>16. One mill on the Finiha, 1 on Clonee River, 1 on Sheen River, 1 on Sneem River, and two on the Blackwater.</p> <p>17. On the Finiha River.</p> <p>18. A fish pass about 100 yards long has been built by Mr. Mahony of Dromore, at the top of the Blackwater River, so as to enable the salmon produced from ova artificially hatched, and deposited in the streams which flow into Lough Brin lake to return to this lake. The experiment has succeeded. And one on Clonee, one on the Sheen, one on the Sneem, and one pass on the Roughty, all from private funds.</p> <p>19. Only a grating at the end of mill tail race or stream; nothing at the head of stream to keep the fry from coming into the mill-stream on the Finiha River.</p> <p>20. At tail-race of the mill on Finiha.</p> <p>21. Nothing done in that way.</p> <p>22. Mr. Morty O'Sullivan, Westcoove, one bag-net.</p> <p>23. A head-grating would be much required on the Finiha mill-dam.</p> <p>24. Two; one rod-fishing without licence, and one for strokehauling and using oil in the water.</p> <p>25. Two prosecutions by the Conservators.</p> <p>26. None.</p> <p>27. Eighteen.</p> <p>28. A good many.</p> <p>29. During year.</p> <p>30. From £15 per year to £2 per year, according to trouble.</p> <p>31. None.</p> <p>32. Sneem, as far as they can go; Blackwater, to Lough Brin; Roughty, to the Falls off Moreley's bridge; Sheen, to the end; Droumoughty, to the Lake; Croanaha, to the end; Clonee, to the Lakes; Ounaha, to the Lake; Slaughta, to the Falls on bank off Roughty.</p> <p>33. They are all frequented by salmon except mountain streams.</p>

STATEMENTS from Boards of Conservators—*continued.*

Replies received from Boards of Conservators.		
7. KILLARNEY.	8. LIMERICK.	9. GALWAY.
1. Good.	1. Very good.	1. Satisfactory.
2. About the same.	2. Less productive. Cannot account for the diminution.	2. Rather less productive.
3. Prices vary—say about 2s. in spring, and about 7d. to 8d. for grilse.	3. About 1s. 10d. per lb. 2s. 6d. 5d.	3. Should say about 1s. 2s. 6d. per lb. in spring. 6d. in summer.
4. Nearly all exported.	4. The chief part is exported. Cannot state the proportion retained for home consumption.	4. About nine-tenths purchased for exportation, and one-tenth for home consumption.
5. About the same.	5. About the same in both years.	5. About the same.
6. Greater.	6. Much greater.	6. Rather less.
7. About 1st November. December is the principal. Spawning over about 1st February.	7. About the middle of December. The chief spawning months are December and January. The most important spawning grounds are at Castleconnell, Killaloe, in the Nenagh, Mulcaire, Cappamore, and Suck Rivers.	7. In November. December is the best spawning month. Spawning is over generally about the middle of January.
8. 1st January. 1st June. About 1st April. May.	8. In the Shannon as early as the month of November. About the 1st of June. About the end of April. In April and May.	8. In February at Galway and Ballinahineh. In May. About the end of April. In May.
9. No. Carried on. Not much.	9. It is not. Angling for trout is carried on all through the fishing season.	9. Trout fishing prohibited during the descent of the salmon fry. Scarcely any destruction of fry takes place.
10. About September. Such as the law sanctions at present.	10. About the month of August. The general opinion is that the season for angling should commence early in February and end on the 30th of September.	10. Towards the end of August. The end of September, except one or two rivers which are late.
11. None.	11. No doubt a good many spent fish have been destroyed hitherto in the month of February, but as the water is generally very high in that month thinks that more have been taken in the months of March and April.	11. Not now, but great destruction took place formerly in mill-runs.
12. No change.	12. Know of no changes.	12. Not aware of any change.
13. A decided increase.	13. There has been a very perceptible increase in the average size both of spring salmon and peel during the past ten years. The peel in 1871 were unusually large; they averaged in weight from about 6 lbs. to 11 lbs. The spring salmon were also very large, averaging from 15 lbs. to 40 lbs. There has been a marked improvement in this respect since 1868, but cannot state the precise extent of such improvement.	13. Yee. There is an increase in the number and size of spring fish. Peel not quite so numerous as in 1870. In 1871 the average weight was 6½ lbs.
14. None.	14. No.	14. Not now.
15. Diminished.	15. There was a larger number of prosecutions in 1871 than in 1870.	15. Diminished considerably.
16. Fleak Mills, Killarney.	16. Could not answer this query at present, or within the space allowed.	16. —
17. Fleak Mills, Killarney.	17. Knows of but one place where a very pressing necessity exists for a fish-pass, namely, at Abington, where an old weir crosses the Mulcaire River, and prevents the ascent of fish except in very high floods. The mill to which this weir belongs has not been worked for a long time, and is now in a dilapidated condition.	17. —
18. None.	18. —	18. Abbey, Knockmoy, Milltown, Ballinrobe, Hollymount, all built by the Board of Works; one built in Cong by the late Thomas Ashworth, Esq., and one built at Ballyglurrin by Walter Blake, Esq.
19. No.	19. In very few places. There is a grating at Ballyartella mill on the Nenagh River and at Ennis mill.	19. Yes, where necessary at Galway, and some tributaries of Lough Corrib.
20. Cannot.	20. Cannot say.	20. In Galway at tail and head races, &c.
21. There are one or two gratings.	21. Know of none.	21. —
22. There are no fixed engines in the district	22. All the weirs for which certificates were granted were used last season.	22. Galway weirs, by Messrs. John Miller and Co.
23. —	23. Head and tail gratings would be advantageous wherever they could be erected.	23. It would be advantageous in many mills, if the erection could be carried out without interfering with the mill power.
24. Have not got the return.	24. This space would not contain such list.	24. —
25. Have not got returns.	25. Know of none.	25. None other.
26. No.	26. No.	26. None.
27. About 120.	27. About 90 in the open season, and 135 in the close season.	27. Twenty-six.
28. About 40.	28. None.	28. Over two hundred.
29. Some twelve months; others three months.	29. About 40 are employed permanently. The remainder as required.	29. Some annually, and the great bulk of them for the spawning season only.
30. Some £11 per year; others from £2 to £3 for three months.	30. From 5s. to £1 per week.	30. From £2 to £17 10s.
31. None.	31. No.	31. None at present.
32. Laune, Main, Carha, Beigh, Waterville.	32. The Cashen and Feale, Maigne, Askeaton, and Fergus, the Shannon, the Mulcaire, the Nenagh River, the Scarriff River, the Brosna, the Suck, and the Inney. Cannot reply correctly to the other portions of this query.	32. The fish have free scope for ascending the rivers as far as it is desirable for them to go, as a general rule.
33. —	33. Knows of no river of any consequence which is not frequented by salmon.	33. None.

Substance of Queries issued to Boards of Conservators.	Replies received from Boards of Conservators.	
	10 ¹ . BALLYWATILL.	
1. What is the general state of the Salmon Fisheries in this district ?	1. Inferior, as compared with last season.	
2. Has the take of salmon throughout the district been more or less productive in 1871 than in 1870, and to what is attributed the increase or diminution ?	2. Less productive. More fish came in late in August than usual.	
3. What was the average price obtained for salmon last year by the captors ? (This has no reference to price obtained by the dealers in salmon.) What was the highest price given for salmon last season ? What was the lowest price ?	3. 6½d. 7d. 6d.	
4. What proportion of the entire capture in your district is exported, and what proportion purchased for home consumption ?	4. Nine-tenths for exportation. One-tenth for home.	
5. What has been the amount of protection rendered during the present close season of 1871, as compared with preceding season of 1870 ?	5. About the same.	
6. Has the quantity of breeding fish observed in the rivers in your district been greater or less as compared with preceding year, 1870 ?	6. Greater than 1870.	
7. About what period do the salmon commence to spawn in the several rivers in your district ? What are the greatest spawning months ? and when is spawning over ? and generally where are the most important spawning grounds situated ?	7. About 20th November. December. Over about 8th January.	
8. At what period of the year, in each river in your district, are the first clean fish taken ? When do the grilse begin to run ? When are the spent fish well out of the river ? and when does the great bulk of the fry go to sea ?	8. Latter end of April. June. April. March and April.	
9. During the descent of the fry to the sea, is angling for trout prohibited by any of the proprietors of fisheries ; or is it carried on during these months ; and does much destruction of fry take place ?	9. Not prohibited. Very little angling so early.	
10. At what period of the year do the fish begin to be discoloured, or to get heavy in spawn ; and what is the general opinion as to the proper season for angling in your district ?	10. September. In October.	
11. Have you reason to suppose that many spent fish have been destroyed hitherto in the month of February, and full fish in the month of October by anglers ?	11. Not many. A few in October.	
12. Are you aware of any change having taken place in regard to the period of the season when the salmon in your district is in best order, whether earlier or later than heretofore ? If so, state particulars.	12. None.	
13. Has there been any increase in the average size of the spring salmon or the peel since 1868 ? Give average weight of salmon and peel in that year, and in the season 1871, as far as practicable ?	13. None. 12 lbs. to 14 lbs. 6 lbs. to 7 lbs.	
14. Are there any pollutions or poisonous matter, entering the rivers in your district ? If so, state the particular cases.	14. None.	
15. Have offences against the Fishery Laws increased or diminished ?	15. About the same.	
16. Give a list of the mill-weirs or dams, or other obstructions in each river in your district ; and specify where ladders or fish passes have been built, when, and by whom ?	16. Louisburgh Tuok Mill—the dam, and Balclare Mills, on the Balclare river.	
17. State where fish passes would be practicable and advantageous ?	17. —	
18. Give a list of all the fish ladders or passes built in your district, whether under the provisions of the Fishery Acts, or by the Board of Works or private individuals ; and specify each locality.	18. —	
19. Have gratings been attached to mill-leads, or other artificial channels, in conformity with the 32 Vic., cap. 9 ; and, if so, specify the particular cases ?	19. —	
20. State the instances in which the provision has been partially carried out, specifying whether at the head or tail race ?	20. —	
21. State the instances and nature of precautions adopted at mills to prevent the destruction of fish, other than that prescribed by the late Act ?	21. —	
22. State where and by whom fixed engines were used in 1871 ?	22. —	
23. State any instances where head and tail gratings, either or both, would be advantageous (specifying which) if erected ?	23. —	
24. Can you give a list of the prosecutions instituted by the Conservators during the year 1871 ?	24. —	
25. Also give a list of prosecutions for fishery offences instituted by others, stating by whom ?	25. —	
26. Are there any new modes of fishing for salmon adopted in your district ? If so, describe them, and where used.	26. —	
27. Number of water-bailiffs employed by Conservators ?	27. Thirty.	
28. Number employed in district by private individuals ?	28. Twelve.	
29. For what length of time employed ?	29. Five all the year ; the remainder for the close season.	
30. Rate of wages paid by the Conservators ?	30. One £10, the others £4 to £1 10s.	
31. Are there any suggestions or general observations with which the Conservators may be disposed to favour the Inspectors, with reference to the Salmon Fisheries in your district ?	31. —	
32. Give the names of the rivers in your district frequented by salmon, and state how far up each river they ascend ; and if prevented ascending further by artificial or natural obstructions, and of what character are these obstructions ?	32. Carronisky, Louisburgh, Balclare, Erriff, Bundoragha, Colfin, Douris.	
33. Give the names of the rivers in your district not frequented by salmon ; and if this is caused by natural or artificial obstructions, or from what cause ?	33. —	

STATEMENTS from Boards of Conservators—*continued.*

Replies received from Boards of Conservators.		
10 th . BANGOR.	11. BALLINA.	12. SLIGO.
<p>1. About the same as last year.</p> <p>2. On the whole the take has been about equal to 1870.</p> <p>3. The average price would be about 8d. per lb. For a few fish in the early season 2s. 2d. per lb. 6d. per lb.</p> <p>4. All exported.</p> <p>5. So far in the present close season the protection is better than that of 1870.</p> <p>6. A much greater quantity of breeding fish on the rivers this year.</p> <p>7. Some spawning takes place in November, but December is the principal month, and towards the latter end of January all spawning is over. The spawning grounds have no particular location.</p> <p>8. The first clean fish are caught in the Lake Carramore District, on 16th February, but might be caught much earlier. The general fishing is a summer one. Grilse begin to run in June, but this year much earlier, and in greater quantities than usual in the early part of June. Early in March. April and May.</p> <p>9. Where the lessee of the tidal fishing has that power all angling is prevented in the upper waters by him during the descent of the fry, otherwise great destruction takes place.</p> <p>10. All salmon are heavy in spawn by the end of September, and the general opinion is that angling should cease on the 30th of September in each year.</p> <p>11. There is no angling in February, but much destruction of breeding fish takes place in October by angling.</p> <p>12. No observable change.</p> <p>13. Cannot give the average size of spring salmon as required, but this class of fish has greatly increased in size within the last four years, not being unusual to get fish from 20 lbs. to 25 lbs. weight now, and a proportionate increase has taken place in the summer fish; the above has reference to the largest fishings in the district.</p> <p>14. None of any description.</p> <p>15. Greatly increased.</p> <p>16. The only mill weir of any importance is on the Newport River, where also there is a fish ladder above the old salmon weir.</p> <p>17. —</p> <p>18. Only one fish ladder above alluded to.</p> <p>19. Yes.</p> <p>20. —</p> <p>21. No instances of this nature.</p> <p>22. —</p> <p>23. —</p> <p>24. —</p> <p>25. —</p> <p>26. None.</p> <p>27. Eighty.</p> <p>28. —</p> <p>29. During close season.</p> <p>30. The funds of the Conservators not being sufficient to pay the number of water bailiffs required, the difference, being the largest portion of the salaries, is paid by the owners of the several rivers. The wages rate according to the duty to be performed.</p> <p>31. —</p> <p>32. Owenmore, Owenduff or Ballycroy, Newport, Burrischoole, Glenamoy, Munhlm, and tributaries of Lake Carramore, viz., Glenturk, Glencullen, and Ballinaboy. There are no obstructions to the fish ascending.</p> <p>33. No streams of any importance in the district, further than those already mentioned.</p>	<p>1. Very favourable. Never had a better prospect.</p> <p>2. Much the same as in 1870, but would no doubt have been much more were it not that the month of July set in so wet.</p> <p>3. Cannot say the average price. 2s. per lb. 6d. per lb.</p> <p>4. Cannot say.</p> <p>5. By Conservators in 1870, £195; in 1871, £206. By lessees of Moy Fishery, £600.</p> <p>6. Much greater than for many years past.</p> <p>7. Salmon commence to spawn in the end of October. November and December are the greatest spawning months. Swinford, Crossmolina, Curry, Tubbercurry, Belaghy, Turlow, Rathfran, and Easky, are the most important spawning districts.</p> <p>8. Moy, February; Easky, June; Rathfran and Ballycastle, September. End of April. Middle of April. April and May.</p> <p>9. Angling for trout is now prohibited during the months of April and May, by a recent by-law, previous to which great destruction was done to the salmon fry under the pretence of angling for trout.</p> <p>10. Salmon in the Moy begin to get discoloured in August, and in the other rivers a month or so later. The general opinion is that angling should be as it now is, commencing 1st February, and ending 15th September.</p> <p>11. A great many.</p> <p>12. No.</p> <p>13. Unaware.</p> <p>14. None.</p> <p>15. Fishing with nets during the close season is now carried on to a great extent in this district, and in some parts of it much more poaching has been carried on this winter than in either of the two past.</p> <p>16. There are several mill weirs upon the Cladagh River, near Castlebar, in which there are no fish passes or ladders, and are a great obstruction to fish passing up, as also one upon the Bunree River, erected in the year 1846 or 1847, and one upon the Curry River, built this season at Curry. The only fish pass or ladder in this district is upon the Mohama River, near Turlow, put up by the Board of Works some twenty years ago.</p> <p>17. Upon mill weirs, on the Cladagh River.</p> <p>18. Only one upon the Mohama River, put up by the Board of Works.</p> <p>19. To nearly all.</p> <p>20. —</p> <p>21. There are none in this district.</p> <p>22. —</p> <p>23. —</p> <p>24. —</p> <p>25. None, excepting those by Mr. Little, the manager of the Moy Fishery, who had sixty-seven cases last year.</p> <p>26. None, except the drafting in the fresh water portion of the Moy.</p> <p>27. Fifty.</p> <p>28. Some 250.</p> <p>29. November, December, and January for the protection of salmon; April and May for the fry; and some for the whole year.</p> <p>30. From £1 to £10.</p> <p>31. That netting in the close season should be more severely dealt with, and that some additional means should be created for the better protection of our rivers during the spawning months.</p> <p>32. Moy, Rathfran, Easky, and Ballycastle, and their several tributaries. Salmon ascend the Moy in some of its branches some thirty miles, and upon the other rivers not more than ten. There are no natural obstructions to prevent fish ascending, and the only artificial ones are the head weirs of mills.</p> <p>33. There are several rivulets, but no rivers.</p>	<p>1. Satisfactory.</p> <p>2. About the same.</p> <p>3. Various prices; from 3s. down to 8d. per lb.</p> <p>4. Almost all exported.</p> <p>5. Rather better.</p> <p>6. Greater.</p> <p>7. November. The last fortnight in December. In January. In upper tributaries.</p> <p>8. Sligo River, January; Ballisodare River, April; Drumcliff River, March. May. April. April and May.</p> <p>9. Not prohibited. Little or no destruction of fry.</p> <p>10. In the inland waters begin to get discoloured in May. The present season fixed for angling is a fair one.</p> <p>11. Not many—the rivers too well protected. Angling in October stopped.</p> <p>12. No.</p> <p>13. There is an increase in weight of spring fish. Peel about the same.</p> <p>14. None, unless a little flax water now and again, but well looked after.</p> <p>15. Diminished.</p> <p>16. Fish passes at Sligo and Ballisodare.</p> <p>17. Not aware that any more are required.</p> <p>18. Ballisodare and Sligo, built by private individuals.</p> <p>19. All where required.</p> <p>20. None.</p> <p>21. None.</p> <p>22. —</p> <p>23. All done as required.</p> <p>24. Cannot.</p> <p>25. A few, by William Petric.</p> <p>26. None.</p> <p>27. Twenty-five.</p> <p>28. About sixty.</p> <p>29. Mostly during the close season, and a few in the open season.</p> <p>30. From £15 down to £2.</p> <p>31. Nothing particular, as things are all fairly settled at present.</p> <p>32. Drumcliff River, Bonid, Sligo, Ballisodare, Owenmore, Arrow, Dunmorran, Dromore West.</p> <p>33. None.</p>

Substance of Queries issued to Boards of Conservators.	Replies received from Boards of Conservators.
	13. BALLYSHANNON.
<ol style="list-style-type: none"> 1. What is the general state of the Salmon Fisheries in this district? 2. Has the take of salmon throughout the district been more or less productive in 1871 than in 1870, and to what is attributed the increase or diminution? 3. What was the average price obtained for salmon last year by the captors? (This has no reference to price obtained by the dealers in salmon.) What was the highest price given for salmon last season? What was the lowest price? 4. What proportion of the entire capture in your district is exported, and what proportion purchased for home consumption? 5. What has been the amount of protection rendered during the present close season of 1871, as compared with preceding season of 1870? 6. Has the quantity of breeding fish observed in the rivers in your district been greater or less as compared with preceding year, 1870? 7. About what period do the salmon commence to spawn in the several rivers in your district? What are the greatest spawning months? and when is spawning over? and generally where are the most important spawning grounds situated? 8. At what period of the year, in each river in your district, are the first clean fish taken? When do the grilse begin to run? When are the spent fish well out of the river? and when does the great bulk of the fry go to sea? 9. During the descent of the fry to the sea, is angling for trout prohibited by any of the proprietors of fisheries, or is it carried on during these months, and does much destruction of fry take place? 10. At what period of the year do the fish begin to be discoloured or to get heavy in spawn; and what is the general opinion as to the proper season for angling in your district? 11. Have you reason to suppose that many spent fish have been destroyed hitherto in the month of February, and full fish in the month of October by anglers? 12. Are you aware of any change having taken place in regard to the period of the season when the salmon in your district is in best order, whether earlier or later than heretofore? If so, state particulars. 13. Has there been any increase in the average size of the spring salmon or the peol since 1868. Give average weight of salmon and peol in that year, and in the season 1871, as far as practicable? 14. Are there any pollutions or poisonous matter entering the rivers in your district? If so, state the particular cases. 15. Have offences against the Fishery Laws increased or diminished? 16. Give a list of the mill-weirs or dams, or other obstructions in each river in your district; and specify where ladders or fish passes have been built, when, and by whom? 17. State where fish passes would be practicable and advantageous? 18. Give a list of all the fish ladders or passes built in your district, whether under the provisions of the Fishery Acts, or by the Board of Works or private individuals; and specify each locality. 19. Have gratings been attached to mill-leads, or other artificial channels, in conformity with the Act 32 Vic. cap. 9; and, if so, specify the particular cases? 20. State the instances in which the provision has been partially carried out, specifying whether at the head or tail race? 21. State the instances and nature of precautions adopted at mills to prevent the destruction of fish, other than that prescribed by the late Act? 22. State where and by whom fixed engines were used in 1871? 23. State any instances where head and tail gratings, either or both, would be advantageous (specifying which), if erected? 24. Can you give a list of the prosecutions instituted by the Conservators during the year 1871? 25. Also give a list of prosecutions for fishery offences instituted by others, stating by whom? 26. Are there any new modes of fishing for salmon adopted in your district? If so, describe them, and where used? 27. Number of water-bailiffs employed by Conservators? 28. Number employed in district by private individuals? 29. For what length of time employed? 30. Rate of wages paid by the Conservators? 31. Are there any suggestions or general observations with which the Conservators may be disposed to favour the Inspectors, with reference to the Salmon Fisheries in your district? 32. Give the names of the rivers in your district frequented by salmon, and state how far up each river they ascend; and if prevented ascending further by artificial or natural obstructions, and of what character are these obstructions? 33. Give the names of the rivers in your district not frequented by salmon; and if this is caused by natural or artificial obstructions, or from what cause? 	<ol style="list-style-type: none"> 1. Satisfactory. The keepers from all parts of the district unanimously report a full stock of breeding fish in their several rivers. 2. Not so productive in 1871 as in 1870. No cause can be assigned. 3. From 3d. to 8d. 2s. 5d. 4. Almost all exported. 5. On nearly all the rivers in this district increased protection has been afforded to the breeding fish. 6. Considerably greater this year. 7. Commence in November. Greatest spawning in November and December. Spawning over in January. Most important spawning grounds are in the Arney, Swanlinbar, Maguire's-bridge, Killeshandra, Ballyconnell, and Erne Rivers. 8. The Bundrowes, in February; the Erne, in April and May. End of May and beginning of June. All out in April. April, and early part of the month of May. 9. Prohibited in the Erne only. 10. End of August. Discolouring season in the Bundrowes, from 1st February to middle of September. Some of the Conservators think it should begin earlier in the Drowes; in the rest of the district from the middle of May to middle of September. 11. In the Erne a great many spent fish are taken by spoon bait under pretence of fishing for pike; and some full fish are taken in October in the same manner. 12. Not aware of any change. 13. Not aware of any difference. Average about 7 lbs. Same in both years. 14. Not aware of any, except flax-water. 15. Much the same. 16. Carries have been built across the Olley River, proving a total obstruction to spawning fish. 17. At Ballycassidy, Littlemount, and the Olley Rivers. 18. Ballyconnell, by Board of Works, in 1857. Carroul Lock in 1851, Skalin Lock in 1851, near Pettigo, by Dr. Shell, long time back, now dry. A new pass was erected last year at Donegal, and one at Littlemount, by the proprietors of the Ballyshannon Fisheries. 19. Not aware of any. 20. None reported since last year. 21. Not aware of any. 22. — 23. At all mills. 24. — 25. — 26. None this year. 27. 197. 28. Eight. 29. Yearly. 30. From £7 to £1. 31. The opening of the fishing in the Bundrowes river earlier; the closing of the angling season sooner than is at present prescribed by law; and the prohibition of fishing with spoon bait in the Erne river, at the beginning and end of the present open season for angling for salmon and trout. 32. — 33. Silleea, at Derrygonnelly, not frequented, owing to mud at its mouth. Bradogue—fish cannot get up, owing to shingle accumulations at mouth at Bundoran.

STATEMENTS from Boards of Conservators—*continued*.

Replies received from Boards of Conservators.		
14. LITTIKENNY.	151. LONDONDERRY.	153. COLERAINE.
<p>1. Satisfactory.</p> <p>2. Believe the take of salmon in 1871 has been about equal to that in 1870. No heavy floods occurred to destroy the ova.</p> <p>3. 8d. 2s. 6d. 6d.</p> <p>4. Almost the entire capture exported to English markets. About one-fiftieth purchased for home supply.</p> <p>5. The same amount as in 1870.</p> <p>6. The breeding fish have been observed equally plentiful in 1871 as in 1870.</p> <p>7. End of November and December. December to January. Spawning is almost over at end of January; very few run to February. The most important spawning beds are from Ballydoon bridge, above Lough Erne, to upper sources of the River Lennan.</p> <p>8. In beginning of February, when fishing opens. Some early in May. All gone by end of March. Months of April and May.</p> <p>9. Angling for trout is not prohibited. Angling is only carried on by a few persons who are permitted to fish, and no salmon fry is destroyed, except by poachers, if they can evade detection.</p> <p>10. About the month of August. Fish are heavy in spawn about end of October. The present season fixed for angling is considered fair; heard no opinion to the contrary.</p> <p>11. Believe few spent fish have been destroyed in the month of February, as fishing is not carried on till the following month. Little angling is carried on in this district in the month of October.</p> <p>12. Not aware of any.</p> <p>13. Have not heard any remarks on this subject.</p> <p>14. The only poisonous matter that enters the rivers in this district is flax-water, which begins to flow into the rivers about first week in August, and continues until September. This pollution destroys and discolours a quantity of fish yearly.</p> <p>15. Diminished.</p> <p>16. One about Ramelton, and one at Tully—the former built by Mr. Kelly, some six years since; the latter, by the late Mrs. Watt, previously.</p> <p>17. At Ramelton or Tully; when the water is low, during the summer, have been told fish cannot ascend the ladders.</p> <p>18. One at Ramelton, by Mr. Kelly, and one at Gweedore, at expense of Lord G. A. Hill, the proprietor. Fish passes have been built also by Lord Cloncurry, on the Gweebarra river, at Bifoght and Cloughernagore.</p> <p>19. Yes, at Ramelton and Tully.</p> <p>20. At Ramelton and Tully mills there are gratings to head races. Not required at tail races.</p> <p>21. None.</p> <p>22. —</p> <p>23. None required.</p> <p>24. None by the Conservators.</p> <p>25. There have been prosecutions instituted by the Constabulary, of minor importance, and one or two cases brought by water bailiffs against poachers, for assaulting them in protecting the salmon fry.</p> <p>26. None.</p> <p>27. About eighty-five.</p> <p>28. Two.</p> <p>29. By the year, mostly, and some during the spawning season only, as extra protection.</p> <p>30. There are three head keepers paid at the rate of from £36 to £25 per annum; others from £3 to £1.</p> <p>31. None.</p> <p>32. —</p> <p>33. Do not know of any rivers unfrequented by salmon.</p>	<p>1. Very fair.</p> <p>2. Increased in 1871.</p> <p>3. 7½d. per lb. 1s. 6d. per lb. 6d. per lb.</p> <p>4. Nearly all exported.</p> <p>5. Increased.</p> <p>6. Very considerably greater.</p> <p>7. Late in November. December and January. In February. Rivers Derg, Stroule, Glenelly, Finn, Roe, and Faughan.</p> <p>8. In May. End of May. End of March. In April.</p> <p>9. No prohibition for angling during the time mentioned, and considerable destruction of fry takes place.</p> <p>10. Discoloured in end of August, and getting heavy towards the end of September. From the 15th of March to the 15th of October.</p> <p>11. In some seasons large numbers of spent fish are captured in February, and full fish in October, by anglers.</p> <p>12. Not aware of any changes.</p> <p>13. None.</p> <p>14. Flax-water only.</p> <p>15. Owing to the large number of fish in the rivers this winter, offences have considerably increased.</p> <p>16. The only fish pass in this district is at Slon Mills, on the Mourne River, constructed by the proprietor of the mills.</p> <p>17. At Ballyarton, on the Faughan river.</p> <p>18. Slon Mills weir, on the Mourne River, erected by the proprietor of the mills.</p> <p>19. —</p> <p>20. —</p> <p>21. None, except extra watching by bailiffs.</p> <p>22. —</p> <p>23. Specially important and necessary at Messrs. Ballentine, Brothers' mills, on the Faughan River, where they were ordered to be erected by the Inspectors, from 1st November till 15th January, and which order has not been complied with. And also at Messrs. Donnelly and Scott's mills, at Omagh, and various other places where the Inspectors ordered them to be erected.</p> <p>24. —</p> <p>25. The Constabulary have instituted several prosecutions for allowing flax-water to flow into the several breeding rivers, and also for other offences.</p> <p>26. None.</p> <p>27. About 100.</p> <p>28. About ninety by the Lessees of the Irish Society's Fishery in the Foyle.</p> <p>29. Generally from 1st November till 1st April; in a few cases the whole year.</p> <p>30. From £20 to £3.</p> <p>31. The Conservators would strongly recommend that the close season for angling be extended from 15th October till 15th March.</p> <p>32. —</p> <p>33. The Upper Faughan, and see return of rivers frequented by salmon, in which all obstructions and their character are described, Appendix.</p>	<p>1. Very prosperous.</p> <p>2. Less productive, owing to the moistness of the season of 1871. The rains fell more abundantly than in 1870.</p> <p>3. 2s. per lb. 4s. per lb. 8d. per lb.</p> <p>4. Two-thirds of the salmon are exported, and one-third is purchased for home consumption.</p> <p>5. Protection is increased this season; a few water-bailiffs having been added to the list in the early part of the season of 1871.</p> <p>6. Much the same as in the preceding season of 1870.</p> <p>7. In November. The greatest spawning month is December. It ends in January. The most important spawning beds are the Maine and its tributaries, from Shane's Castle point, to Ballymena, Kells, Connor, and Cullybackey.</p> <p>8. About the 1st February. In April and May. About the latter end of February. In May and June.</p> <p>9. Not aware that the angling for trout is prohibited by any of the proprietors of fisheries; nor aware that much destruction of fry takes place by anglers.</p> <p>10. In October. That the season now fixed for angling is properly fixed.</p> <p>11. Few spent fish have been destroyed in the month of February. More full fish have been taken by anglers in October.</p> <p>12. Salmon are always best in season in June and July, and I believe have ever been so.</p> <p>13. Of opinion the weight of salmon has increased this year. The average weight in 1868 was from about 10 to 12 lbs., and this year it was from about 12 to 14 lbs.</p> <p>14. From Bleaching Works at Ballymena, Randalls-town, and Ballyclare. The owners have all taken means to prevent it, but these means are not fully effectual in some instances.</p> <p>15. They have considerably diminished.</p> <p>16. —</p> <p>17. Over the Ballymena Spinning Company's mill dam.</p> <p>18. Toomebridge, Portna, Moranagher, Carrin Roe, these built by the Board of Works on the River Bann. Benburb, by a private Company on the Blackwater.</p> <p>19. They have been placed at the tail races at Randalls-town, Crevillyvalley, Kildrum, Kells, Lisafflan, Fanaghy, and Drumona.</p> <p>20. At the tail races in the before mentioned cases.</p> <p>21. None.</p> <p>22. —</p> <p>23. At Greenfield, near Kells.</p> <p>24. Total amount of fines received from the various Petty Sessions Clerks in this District for the year ending 31st December, 1871—£33 4s. 7d.</p> <p>25. The police were the prosecutors in a few of the cases referred to in reply to Query No. 24.</p> <p>26. None.</p> <p>27. Fifty-nine.</p> <p>28. Sixteen.</p> <p>29. The whole year.</p> <p>30. From £5 to £40.</p> <p>31. The fixed nets at Cranagh and Grangemore should be abolished.</p> <p>32. The Maine River—from Lough Neagh to Killlaggan. The Clough River—from the Maine River at Andraid to Boyle's publichouse. The Braid River—from Ballymena to Forked Bridge. The Kells Water River—from the Maine to Glenwhirry. The Aughadooley and Agivey River—from the Bann to Glenullar. The Clondy River—from the Bann to Knockanell. The Moyola River—from Lough Neagh to Derrynoid. The Sixmiles River—from Lough Neagh to Ballyclare. No prevention in any of these to salmon passing up and down them by either natural or artificial means.</p> <p>33. None.</p>

Substance of Queries issued to Boards of Conservators.	Replies received from Boards of Conservators.
	16. BALLYCASTLE.
<ol style="list-style-type: none"> 1. What is the general state of the Salmon Fisheries in this district? 2. Has the take of salmon throughout the district been more or less productive in 1871 than in 1870, and to what is attributed the increase or diminution? 3. What was the average price obtained for salmon last year by the captors? (This has no reference to price obtained by the dealers in salmon.) What was the highest price given for salmon last season? What was the lowest price? 4. What proportion of the entire capture in your district is exported, and what proportion purchased for home consumption? 5. What has been the amount of protection rendered during the present close season of 1871, as compared with preceding season of 1870? 6. Has the quantity of breeding fish observed in the rivers in your district been greater or less as compared with preceding year, 1870? 7. About what period do the salmon commence to spawn in the several rivers in your district? What are the greatest spawning months? and when is spawning over? and generally where are the most important spawning grounds situated? 8. At what period of the year, in each river in your district, are the first clean fish taken? When do the grilse begin to run? When are the spent fish well out of the river? and when does the great bulk of the fry go to sea? 9. During the descent of the fry to the sea, is angling for trout prohibited by any of the proprietors of fisheries, or is it carried on during these months, and does much destruction of fry take place? 10. At what period of the year do the fish begin to be discoloured, or to get heavy in spawn; and what is the general opinion as to the proper season for angling in your district? 11. Have you reason to suppose that many spent fish have been destroyed hitherto in the month of February, and full fish in the month of October by anglers? 12. Are you aware of any change having taken place in regard to the period of the season when the salmon in your district is in best order, whether earlier or later than heretofore? If so, state particulars. 13. Has there been any increase in the average size of the spring salmon or the peel since 1868. Give average weight of salmon and peel in that year and in the season 1871, as far as practicable? 14. Are there any pollutions or poisonous matter entering the rivers in your district? If so, state the particular cases. 15. Have offences against the Fishery Laws increased or diminished? 16. Give a list of the mill-weirs or dams, or other obstructions in each river in your district; and specify where ladders or fish passes have been built, when, and by whom? 17. State where fish passes would be practicable and advantageous? 18. Give a list of all the fish ladders or passes built in your district, whether under the provisions of the Fishery Acts, or by the Board of Works or private individuals; and specify each locality. 19. Have gratings been attached to mill-leads, or other artificial channels, in conformity with the 32 Vic., cap. 9; and, if so, specify the particular cases? 20. State the instances in which the provision has been partially carried out, specifying whether at the head or tail race? 21. State the instances and nature of precautions adopted at mills to prevent the destruction of fish, other than that prescribed by the late Act? 22. State where and by whom fixed engines were used in 1871? 23. State any instances where head and tail gratings, either or both, would be advantageous (specifying which) if erected? 24. Can you give a list of the prosecutions instituted by the Conservators during the year 1871? 25. Also give a list of prosecutions for fishery offences instituted by others, stating by whom? 26. Are there any new modes of fishing for salmon adopted in your district? If so, describe them, and where used? 27. Number of water-bailiffs employed by Conservators? 28. Number employed in district by private individuals? 29. For what length of time employed? 30. Rate of wages paid by the Conservators? 31. Are there any suggestions or general observations with which the Conservators may be disposed to favour the Inspectors, with reference to the Salmon Fisheries in your district? 32. Give the names of the rivers in your district frequented by salmon, and state how far up each river they ascend; and if prevented ascending further by artificial or natural obstructions, and of what character are these obstructions? 33. Give the names of the rivers in your district not frequented by salmon; and if this is caused by natural or artificial obstructions, or from what cause? 	<ol style="list-style-type: none"> 1. Favourable. 2. The take in 1871 was not so great as in 1870. This is attributed to the dry season. 3. 3s. 9d. per lb. 2s. 4d. per lb. In spring months 8d. per lb. 4. Almost all exported. 5. Much the same as in the preceding year of 1870. 6. Considerably greater than in 1870. 7. 1st November. From 1st November till 20th December. 1st January. All River Bush contains good spawning ground. 8. Believe a clean fish can be got in the Bush any day in the year. 20th June. 15th April. During April and until 15th May. 9. It is prohibited in upper waters. Where salmon angling is let little damage is done. 10. Fish don't become discoloured until they are some time in river. They get heavy in spawn towards end of August. The general opinion is angling is carried on too long. 11. Has never known any spent fish being destroyed except by accident or mistake. Full fish are often killed in October by legitimate anglers and poachers. 12. No. 13. — 14. Nothing except flax-water. 15. Diminished. 16. Does not think any fish passes required. 17. None necessary in this district. 18. — 19. Yes, generally. 20. — 21. Nothing but gratings. 22. — 23. In all mill-races, should say. 24. — 25. None. 26. None. 27. On Bush, thirteen permanent men; twenty-five during spawning season. On the Ballycastle sub-district, four permanent men, and seven in spawning season. 28. One. 29. See above, No. 27. 30. Permanent men from 7s. to 10s. per week. Watchers at spawning season 10s. to 12s. 31. None. 32. Bush all frequented by salmon; Margy River, about five miles; Glendunn River, about six miles; Glenariff River, about four miles; Glencloy River, about one and a half miles. Prevented from going farther by a ledge of rock or leap across the river. 33. —

STATEMENTS from Boards of Conservators—concluded.

Replies received from Boards of Conservators.

17. DROGHEDA.

1. Good; steadily improving for the last two or three years.
2. More productive, especially the early spring fishing, to the great advantage of anglers. The supply of fish in the principal rivers is yearly on the increase.
3. About 1s. 2d. 2s. 5d. The price of salmon in Drogheda district is always under the average elsewhere, from want of competition among the wholesale buyers here.
4. By far the greater portion is sent away, either to Dublin or the English market. The local consumption does not amount to more than one-tenth, at the outside, of the captures.
5. Greater than usual. The staff of employees is about the average of former years, but more attention seems to have been paid by them; and the public, also, are showing more interest in the fisheries.
6. Much greater. All the principal rivers and their tributaries are fully stocked, and new spawning beds are being formed in several localities.
7. Spawning commences in this district very early in October, and is over about the second week in January. Both the Boyne and Blackwater are very good spawning rivers—the latter comparatively the best. Most of the tributaries of both are also good breeding grounds.
8. At the very commencement of the open season in February, but there are plenty of clean fish in January. About 10th June. About the first week in April. In April and May.
9. There is no attempt made to protect the fry, and much of them are destroyed by anglers in April and May.
10. Some few are found in the latter end of August, but from 1st September the great majority are "gravid." The general opinion is that angling might commence in January and close September 1st.
11. Yes, in the upper waters. Spent fish are not found in the tidal waters till April, and "gravid" fish are rarely taken there, because they have mostly passed up before they arrive to that condition, except in the last few days of the season.
12. It is generally admitted now that fish are in "condition" at an earlier period than was formerly supposed, hence the common demand for an earlier commencement of the fishery.
13. Yes, in spring fish. In former years 20lb. fish were rare; in 1868 very few of that size were taken, and those almost entirely by anglers. In 1870 and the present season, many up to 40lbs. were taken by all engines—some few exceeded that weight. Peel has not varied much in any year; the average may be taken at 5lbs.
14. Chiefly "flax steeping" in inland waters.
15. There appears to have been an increase—at least there have been more detections and convictions. Some impunity undoubtedly arose from the fact of the Constabulary Authorities objecting to that force taking so active a part as formerly in fishery cases.
16. —
17. Most of the navigation weirs urgently require passes, as they are nearly insurmountable obstacles for fish. In some few of them passes have been made by the Board of Conservators, which have proved of the greatest utility. All the fishing weirs and most of the mills have passes, but many of the latter are very deficient.
18. —
19. In most cases "exemptions" were granted. One (Commins') erected according to order. One at Kennedy's mill at Trim ordered, but not yet erected—this last a very bad case. Great destruction of fish in tail race.
20. One (Commins') tail race.
21. As a rule, none. In one or two instances the proprietors of mills do what they can to prevent malpractices on their premises.
22. —
23. Such would be useful in almost every instance, but very many have obtained exemptions.
24. —
25. None, but one instituted by a gentleman named French for trespass on a several fishery.
26. An engine known as a night-line is commonly used in the tributary rivers, and causes great destruction of trout. One river, the Nanywater, has been almost cleared of fish, within the last two years, by its use, and there is no remedy unless fish are found with the offenders—the engines should be licensed.
27. One inspector, ten bailiffs.
28. One specially; but the gamekeepers of several proprietors are so employed, as a part of their service.
29. Permanently.
30. £1 10s. per month each bailiff.
31. The open season should commence earlier and close earlier for all description of engines. No fishing should be allowed after September 1st. Eel fishing ought not to commence before August 1st, and should cease by December 1st. All licences, including rods, should be localized, or if used elsewhere than issued, an additional per centage should be charged for the benefit of the district trespassed on.
32. Boyne and Blackwater and their tributaries nearly to their sources. Obstructions both natural and artificial are to be found in all. Passes might be made and improved with great advantage to the fisheries generally.
33. Delvin, Nanywater, Mattock, Deel, Ballywalter, and other small rivers; the chief reason being muddy bottoms not suitable for spawning ground; but trout are found in all.

174. DUNDALK.

1. Satisfactory.
2. Both years nearly equal. A very slight decrease in 1871, owing to the dry season.
3. 1s. 2d. 2s. 2d. 6d.
4. About nine-tenths sent to Dublin and Belfast, and one-tenth purchased for home consumption.
5. Just the same as in 1870.
6. About the same.
7. Commence spawning early in November in the Glyde and Dee. Greatest spawning months in both rivers are November and December, and the most important spawning grounds are situated on the Dee, between Drumcar and the Whitmillis, and up at Ardee. On the Glyde, between Castlebellingham and Manfieldstown, and between Manfieldstown and Tallanstown, and from thence to Tully, and at Coolberry Demesne. In the Fane, between Stephentown Bridge and Channonrock, and between Channonrock and Ballymacarry Bridge. In Dundalk River, from Castletown to Phillipstown Mills, on the Phillipstown branch, and from Castletown to Balrigan Mills, on the Forkhill branch, and from Waterlodge to Dungleoley Mills, on the Dungleoley branch. In the Flurry River, at Ballurigan and Ravensdale Park, and in the Peidmont River at Castletown, Cooley, and Peidmont.
8. In the River Dee, 1st February; the Glyde, 1st March; Fane, 15th March; and in all others north of these in the middle of June. The grilae begin to run in August. The spent fish are well out of the rivers in April. The great bulk of the fry go to sea in May.
9. Angling is not prohibited, and no great destruction of fry takes place.
10. The fish begin to get discoloured in August; they get heavy in spawn in September, except north of Dundalk where they are much later; and the proper season for angling in the Dee and Glyde is from 1st February until 1st September; and in rivers north of the Round Tower of Dromlakin, between the 1st of April and 1st October.
11. Yes, a good many in the Fane and Dundalk Rivers. As the other rivers cannot be fished in October on account of the weeds, and are early in spawning, and fish go sooner to sea, not much destruction takes place in them.
12. Not aware of any change.
13. Cannot give information.
14. Poisonous matters run through the town sewer, discharging itself into the tideway at the Quay of Dundalk, which does considerable damage to the fish at low water.
15. Diminished.
16. —
17. Fish pass very much wanted at Phillipstown, but that heretofore recommended by the Board of Works was thought too expensive, and could not be done. It is thought that one composed of two or three dams below the weir would be far cheaper, and could be done if ordered by the Inspectors. On River Fane passes required at Channonrock and Inniskeen mill weirs. On Dee, at Whitmillis, present pass being useless, and at Julianstown where pass also useless, partly carried away. On Glyde also, at Bragganstown, where pass is very indifferent.
18. Fish passes have been built by the Board of Works at Willistown, Whitmillis, and Ardee, on the River Dee; at the Lynna, Castlebellingham, and Bragganstown on the River Glyde; and at Killany mills on the Ballymakenny River.
19. Gratings have been placed in the following places:—On the River Fane, at Mr. McCann's mill, Knockbridge, head and waste race; Mr. Kieran's mill, Channonrock, head and waste race; Mr. Kelly's, Balrigan mill, tale race; Mr. Dougherty's mill, Scotch green, tail race; Mr. O'Hare's mill, Barleyfield, tail race; Mr. O'Hare's factory, Dulurgy, waste race; Mr. Wynn's bleach mill, at Ravensdale, on tail race and waste race; and Mr. Thompson's bleach mill, at Ravensdale, head race.
20. Answered in reply to No. 19.
21. There is generally a grating before the wheel of each mill, but it would appear this is more to prevent sticks coming against the wheel than for the protection of the fish, as they are too wide between the bars for that purpose.
22. —
23. Grating wanted on tail race at Moyle's mill. Head and tail race grating required at Colloville mill, and at Thompson's Bleach Mill a grating is wanted on waste race. Grating wanted on tail race at Dunleer mill in close season, and at Julianstown a tail race grating is required.
24. —
25. —
26. The only new method attempted is the extraordinary long nets used at Salters-town, between Dunaney and Annagassan.
27. Ten at present.
28. Two.
29. Permanently.
30. Nine at £10 per annum, and one, who is also District Inspector, at £25 per annum, both paid monthly.
31. The Board of Conservators suggest and strongly recommend, that the necessary steps be taken by the Inspectors of Fisheries, with the least possible delay, to have an Act passed authorizing and empowering the Royal Irish Constabulary to enforce the 80th section of 5 & 6 Vic., cap. 106.
32. The Dee.—The salmon go up this river as far as Julianstown, where they are stopped by a mill weir, distance nearly thirty miles. Glyde River.—The salmon go up this river through Ballihoe Lake, distance over 20 miles. Ballymakenny River, which is a tributary of the Glyde.—The salmon go up to Moynalty Lake, near Carrickmacross, twenty miles. Fane River.—The salmon go up as far as Loughros, distance over twenty miles. Dundalk River, Phillipstown branch.—The salmon go up to Phillipstown, they are there stopped by a large rock in the river, and also by the mill weir, distance about six miles; Dungleoley branch—the salmon go up to Dungleoley Mills, and are there stopped by the mill weir, distance about four miles from the junction with the Phillipstown branch. Flurry River.—Salmon only go up this river in high flood or spawning time, but when there is water to bring them up they can go a couple of miles above Flurry bridge, making the distance about eight miles. There seems to be little or nothing known of the rivers north of this, except by the map.
33. Forkhill River—salmon cannot pass Balrigan mills weir, distance about a mile from its junction with the Phillipstown branch, and only a few perches from its junction with the Dungleoley branch. Mitchelstown and Kilmaham Wood, tributaries of the Dee, passage obstructed by the Julianstown mill weir.

REGULATIONS for the ELECTIONS of CONSERVATORS of FISHERIES, 1870.

SALMON FISHERIES ACTS (IRELAND),

32 & 33 Vic., c. 92, and the Acts incorporated therewith.

NOTICE.

WHEREAS all existing Boards of Conservators will cease in the month of October next, and new Boards are to be elected, We, the Inspectors of Irish Fisheries, call the attention of the Boards of Conservators, and those interested in the Fisheries, to the following provisions and regulations in respect to such

ELECTIONS OF CONSERVATORS OF FISHERIES.

The elections for the district of _____ should be held so as to commence on the _____ day of October next.

1.—The Board of Conservators shall fix and publish notice of the *times and places for the meetings* of electors, in each electoral division, for the election of Conservators for the same, and the number of Conservators as already settled to be elected for each electoral division.

2.—*Two weeks' notice thereof shall be given by hand-bills and advertisements* in two or more newspapers circulating in the district.

3.—The meetings for elections shall commence at the hour named in the notice to be published by the Boards of Conservators, and no votes shall be received after three o'clock in the afternoon of the day so fixed.

4.—Every person shall be entitled to vote at such meetings who shall have paid licence duty for the current year, within the electoral division for which such meeting is held, and no others.

5.—Such person shall choose a Chairman to preside at such meeting, who shall receive the votes of the electors.

6.—No person shall be eligible for the office of Conservator in any electoral division in which he does not reside or possess real property.

7.—Every person shall produce their licences for the current year at the time of voting.

8.—Persons entitled as aforesaid to vote at such meetings shall be entitled to have a vote or votes thereat according to the following scale (that is to say) if the licence duty paid—

Shall not amount to £2,	One Vote.
Shall amount to £2, and not amount to £5,	Two Votes.
Shall amount to £5,	Three Votes.
Shall exceed £10,	Four Votes.

9.—Persons voting by proxy shall indorse upon their licence the name of the proxy whom they authorize to vote for them, and the said licence shall be produced at the time of voting by the said proxy, *such proxy being a qualified elector.*

10.—The Chairman of such Meetings respectively shall declare the persons who shall have received the greatest number of votes to be the elected Conservators and shall certify under his hand the election of each Conservator, and furnish him with a certificate which shall be sufficient authority for him to act as such Conservator; and shall also, *within four days after such election*, cause a list of such Conservators, with a statement of the residence and post town of each, to be transmitted to our office, 12, Ely-place, Dublin, and shall also publish the said list in one or more newspapers circulating in the district.

11.—If in any district one or more persons shall possess a several or exclusive fishery or fisheries therein, as owner, lessee, or occupier, valued under the Acts for the more effectual relief of the destitute poor in Ireland at one hundred pounds yearly, or upwards, he or they shall be entitled to sit with the elected Conservators for such district, and shall be deemed ex-officio a Conservator or Conservators for the same, so long as he or they shall possess such fishery or fisheries, and shall have a vote in all matters, and have all the powers and privileges under the Act which the elected Conservators may individually possess; provided always, that when a fishery so rated shall be held by several persons as owners, lessees, or occupiers, one person alone shall sit and act as a Conservator as aforesaid in respect of such fishery.

12.—Magistrates paying licence duty, and being owners of land abutting on rivers or lakes in any district, may act and vote as ex-officio members of any Board of Conservators elected for any such district.

13.—The persons elected, as aforesaid, together with all the said ex-officio Conservators shall conjointly form a Board of Conservators of Fisheries for the District, and shall continue to hold office for three years from the time of their election, when a new Board shall be elected in like manner, and so in like manner at each Triennial Election.

Given under our hands this 15th day of June, 1870.

THOS. F. BRADY.
JOHN A. BLAKE
JOS. HAYES.

NOTE to ¶ 10.—Forms of Certificates will be furnished by the Inspectors to the different Clerks of the Boards of Conservators.

APPENDIX No. 22.

APPENDIX,
No. 22.

DIGEST of the PRINCIPAL SECTIONS in the ACTS of PARLIAMENT relating to the IRISH FISHERIES, with Appendices. Compiled by THOMAS FRANCIS BRADY, Inspector of Irish Fisheries.

5 & 6 Vic., c. 106; 7 & 8 Vic., c. 108; 8 & 9 Vic., c. 108; 9 & 10 Vic., c. 114; 11 & 12 Vic., c. 92; 13 & 14 Vic., c. 88; 24 & 25 Vic., c. 96; 26 Vic., c. 10; 26 & 27 Vic., c. 114; 32 Vic., c. 9; 32 & 33 Vic., c. 92; and 33 & 34 Vic., c. 33.

THE following extracts from the Acts of Parliament in force in Ireland, for the regulation and protection of the Fisheries, are published chiefly for the guidance of Persons empowered to enforce the provisions of the Acts of Parliament, and with the view of pointing out the particular powers they possess under the Statutes, which, being extensive, should, at all times, be carried out temperately, yet firmly and strictly.

There are some provisions referred to applying to the Fresh Water portions of Rivers and Lakes which do not properly come under the cognizance of the Coast Guard. They should confine their duties exclusively to the enforcement of the Laws in the Sea, Sea Coast, and Tidal Waters of Rivers.

Particular attention should be paid to the enforcement of a strict observance of the CLOSE SEASONS, both ANNUAL and WEEKLY, amongst all classes of Fishermen.

T.F.B.

NOTE.—In case of seizure of any Net or other Engine by any person duly authorized to seize same, care should be taken that such Net or other Engine should be brought before the Magistrates at the NEXT SITTING OF THE PETTY SESSIONS COURT, as directed by the 103rd section of the 5th & 6th Vic., c. 106—see No. 69.

No power under the Fishery Laws to seize Boats, save only on second offence against Annual or Weekly Close Season—see Nos. 16 & 30.

No power to seize Fish caught during Weekly Close Season. This power is confined to the Annual Close Season.

No power to seize Black, Foul, or Unclean Fish during the Open Season.

No power to Arrest save in cases pointed out by Nos. 5 & 6.

COAST GUARD, CONSTABLES, POWERS OF, &c.

1. It shall be lawful for such Officers and Petty Officers belonging to the Cruisers of Her Majesty's Navy, and for such Officers and Men of the Coast Guard Stations as shall be thereunto authorized by the Commissioners of Her Majesty's Customs, at such times and in all such places, and subject to such directions and regulations as the said Commissioners of Customs shall from time to time think fit to prescribe, to go on board any Vessel employed in Fishing and examine the certificate of Registry and nets of such Vessel, and whether the regulations of Act have been complied with, and whether the Master and other Persons on board such Vessel are carrying on the said Fishery in the manner required by law, and to seize any illegal Nets or Engines, or any Nets or Engines used contrary to the Provisions of Act, or to any of the Orders, Regulations, or Bye-laws; and lawful for the Officers and Men employed in the Coast Guard Service in Ireland to execute for the purposes of Act on Sea or on Land the Warrants of any Justice as fully and effectually as any person authorized and empowered to execute Warrants of any Justice in Ireland, may now execute the same on Land within their respective Districts; and to do all such other acts on Sea or Land in relation to the preservation of peace among Persons engaged in fishing, and the enforcement of the Provisions of Act as any Constable may lawfully do within his jurisdiction.—See also Nos. 32 and 85.

Officers and Men of Her Majesty's Cruisers, and Officers and Men of Coast Guard Service empowered to enforce Provisions of Act. 5 & 6 V. c. 106, s. 86. Coast Guard empowered to act as Constables.

NOTE.—The Coast Guard should confine themselves to the enforcement of the Law in the Sea, Sea Coast, and Tidal Waters of Rivers, and should not incur any expenses, *unless in cases of emergency*, without the sanction of the Inspectors of Irish Fisheries. All accounts of expenses incurred should be forwarded for payment as soon as possible through the District Captain, to the Accountant-General of the Navy, and, if correct and duly authorized, will be paid.

Coast Guard special powers. Expenses incurred.

2. The enforcement and observance of the Annual Close Seasons for Salmon, Trout, Eel, and Oyster Fisheries respectively; the free passage of Fish during such Annual Close Seasons, and requiring for that purpose the making and maintaining of openings and removal of obstructions—the Weekly Close Seasons for Salmon and Trout—the prohibition of taking, selling, purchasing, or having in possession the Spawn, Smelts, or Fry of Salmon, or Eels, or wilfully obstructing the passage of such, or injuring or disturbing the Spawn or Fry, or any Spawning Bed, Bank or Shallow where same may be, or wilfully taking, killing, destroying, exposing to sale, or having in possession any red, black, foul, unclean, or unseasonable Salmon or Trout, or placing, laying, setting, or drawing any net, grate, creel, or other Engine or Device whatsoever (save and except Rod and line only), in any Mill-pool, or Mill-dam, or in any Works appurtenant to any Mill or Factory, or in any Water-courses leading the Water to or from such Mill or Factory for the purpose of taking or obstructing Salmon or other Fish, or the Fry thereof; or the taking any Salmon, or Trout, or Fry thereof, or spent Salmon in any Eel-weir; or having or using between sunset and sunrise any light or fire, spear, gaff, strokehaul, or other such instrument, with intent to take Salmon or other Fish in or on the Banks of any Lake or River, or chasing, injuring, or disturbing Spawning Fish, or Fish on Spawning Beds, or attempting to catch Fish in such places (except with Rod and Flies only within the lawful period), or damming, or teeming, or emptying any River or Mill-race, for the purpose of taking or destroying any Salmon, or Trout, or the Fry thereof.—See also 32 and 85.

Powers of Constables, 7 & 8 V. c. 108, s. 1.

For Seasons for Salmon and Trout—see Appendix.

For Seasons for Oyster Fisheries—see Special Book of Instructions on the subject.

3. Every Water Bailiff shall be empowered to exercise the power and authorities of a Constable for the enforcement of the provisions of Act, and shall be at liberty, at all times and seasons, without any let or hindrance whatsoever, to enter into and pass through or along the banks or borders of any

Powers of Water Bailiffs. 5 & 6 V. c. 106, s. 84.

APPENDIX,
No. 22.

Lakes or Rivers, frequented by Salmon or Trout, or of the Tributaries thereof, for the protection of the Fisheries whereof he shall be so appointed, and with Boats or otherwise to enter upon all and every such Lakes or Rivers, and to enter upon and examine all Weirs, Sluices, Mill-dams, Mill-races, and Watercourses, communicating therewith, and to pass along the same, and to enter any boat or boats engaged in fishing, and to examine all standing, floating, or other Nets whatsoever, and to seize all illegal Nets, Engines, Instruments, and Devices whatsoever, and all and every other Nets, Engines, and Instruments whatsoever, when used illegally, and to do all such other acts and things as he shall be required to do; and the production of his Certificate of Appointment shall be sufficient Warrant for such Water Bailiff so acting in any of the cases aforesaid. Provided always that nothing herein contained shall be construed to authorize any such Water Bailiff to enter any Garden enclosed with a Wall or Paling, or any Dwelling-house, or the curtilage thereof (except where the ordinary Road or Passage to any Weir, Dam or Dyke shall be through any such Garden or curtilage as aforesaid), save when thereunto authorized by the Warrant of a Justice of the Peace as hereinafter provided.—See also 85.

Justices may grant a Warrant to enter excepted Places. 5 & 6 V. c. 106, s. 85.

4. It shall be lawful for any Justice of the Peace, upon information on oath, that there is probable cause to suspect any breach of the provisions of this Act to be committed within any of the before-excepted Grounds and Premises, by Warrant under his Hand and Seal, to authorize and empower by name any Water Bailiff to enter the said excepted Premises for the purpose of detecting such Offence, at such time or times, in the Day or Night, as in such Warrant may be mentioned. Provided that no such Warrant shall continue in force for more than One Week from the date thereof.

Offenders may be apprehended if they refuse to tell their Names. 5 & 6 V. c. 106, s. 87.

5. When any Person shall be found at Sea, or on Rivers, Lakes, or other Waters, or on Land, offending against any of the Provisions of Act, by the Use of any illegal Net, Engine, or Device whatsoever, for the taking of Fish, or by the use of any Net, Engine, or Device prohibited at such time, or in any other Manner, it shall be lawful for any Officer or Person hereinbefore empowered to enforce the Provisions of Act, or for any Person interested in the Fishery in which such illegal act may be committed, to require the Person so found offending forthwith to desist from such Offence, and also to tell his Christian Name, Surname, and Place of Abode; and in case such Person shall, after being so required, refuse to tell his real Name or Place of Abode, or shall give such a general Description of his Place of Abode as shall be illusory, for the purpose of Discovery, or shall wilfully continue such Offence, it shall be lawful for the Officer or Person so requiring as aforesaid, and also for any Person acting by his Order and in his Aid, to apprehend such Offender, and to convey him or cause him to be conveyed, as soon as conveniently may be, before a Justice of the Peace, to be dealt with according to Law. Provided always, that no Person so apprehended shall, on any pretence whatsoever, be detained for a longer period than Twenty-four Hours from the time of his Apprehension before he shall be brought before some Justice of the Peace; and that if he cannot on account of the Absence or Distance of the Residence of any such Justice of the Peace, or owing to any other reasonable Cause, be brought before a Justice of the Peace within such Twelve Hours as aforesaid, then the Person so apprehended shall be discharged, but may, nevertheless, be proceeded against for his Offence by Summons or Warrant, as if no such Apprehension had taken place.

But not to be detained in Custody longer than 24 hours.

Penalty on Persons using Violence. 5 & 6 V. c. 106, s. 88.

6. Where any Persons, to the number of Three or more together, shall be found by any Water Bailiff or Peace Officer, by Violence, Intimidation or Menace, impeding or obstructing, or attempting to impede or obstruct, any other Person or Persons in the lawful prosecution of any Fishery, it shall be lawful for such Water Bailiff or Peace Officer so requiring, and also for any Person acting by his Order or in his Aid, to Apprehend such Offenders, and to convey them before a Justice of the Peace, to be dealt with according to Law; and every Person so offending by such Violence, Intimidation, or Menace as aforesaid, and every Person then and there aiding or abetting such Offender, shall, upon being convicted thereof, forfeit, and pay for every such Offence such Penalty, not exceeding Twenty Pounds, as to the convicting Justice shall seem meet, together with the Costs of the conviction, which said Penalty shall be in addition to and independent of any other Penalty to which any such Person may be liable for any other Offence against Act.

ASSAULTING OR RESISTING.

Penalty on opposing or assaulting. 5 & 6 V. c. 106, s. 90.

7. If any Person shall assault, resist, or obstruct any of the Commissioners, or any Person acting by their authority, or any Officer of Her Majesty's Navy or Coast Guard, or any Person acting under him, or them, or any Water Bailiff in the execution of any of the Powers conferred on him by Act, or by any Rule, Order, or Bye-law to be made in pursuance of Act, or if the Master of any Fishing Vessel shall refuse to produce his Certificate of Registry when thereunto required, every Person so offending shall for every such Offence forfeit and pay any Sum not exceeding Ten Pounds.

Penalty for obstructing any Person fishing in a legal manner. 5 & 6 V. c. 106, s. 28.

8. If any Person shall resist or obstruct any Persons lawfully engaged in Fishing, or proceeding to Fish, or in returning from Fishing, or shall wilfully and maliciously place any Net or other Engine with the intent and design to prevent Fish from entering the Nets of Persons set or placed in a legal manner, he shall for every such Offence, pay a Penalty not exceeding Five Pounds; and every Net or other Engine so placed shall be forfeited.

BALLAST.

Discharging Ballast in improper places. 5 & 6 V. c. 106, s. 14.

9. No Person shall throw out, or unlade, from any Vessel the Ballast thereof, or any part thereof, within any Estuary, Harbour, or Place, unless where the same may be allowed by the Commissioners, or by the Local Regulations of such Harbour or Place—Penalty not exceeding Ten Pounds.

BYE-LAWS.

10. Copies of Bye-Laws obtained from the Office of Clerk of the Peace, or Clerk of Petty Sessions, and certified by him to be true copies, are legal evidences of the existence of such Bye-Laws, and the due publication thereof.—See Abstract of Bye-Laws in Appendix.

APPENDIX
No. 22.Evidence of.
5 & 6 V. c.
106, sec. 93

CLOSE SEASONS.

11. For Annual Close Seasons in the different Districts in Ireland—see Appendix.

12. The Close Season for Trout fixed to be the same as that for Salmon Fishing.—See Appendix.

For Trout,
13 & 14 V. c.
88, s. 45.

NOTE.—By 21st Section of 26th and 27th Vic., cap. 114, the Annual Close Season shall not comprise fewer than 168 days in each Fishery.

13. Annual Close Season for Angling with Single Rod and Line was fixed by 23rd section 26th and 27th Vic., c. 114, to be uniform over Ireland from 1st November to 1st February. This Season has since been changed in some Districts.—See Appendix.

NOTE.—The Inspectors of Irish Fisheries are now empowered to alter Close Season for Angling, under 32nd and 33rd Vic., cap. 92, sec. 15.—For the changes made see Appendix.

14. Any Person taking or fishing for, or aiding, or assisting in taking or fishing for Salmon or Trout during the Close Season, is liable to a Penalty of any sum not exceeding Ten Pounds for every such Offence, and Forfeiture of Fish and Engine by which the same may have been taken. And any Person buying, selling, or exposing for Sale, or having in his possession any Salmon or Trout, or any part thereof, so caught in the Close Time, shall forfeit such Fish and a Sum not exceeding Two Pounds for each fish; and having in possession shall be *prima facie* evidence of the fish having been caught in Close Season. And any Person placing or hanging any Coghill, or Eel Net, or Basket, or other Fixed modes of catching fish in the Eyes, Gaps, or Sluices of Eel or other Weirs, within prohibited periods, shall be liable to a penalty of Ten Pounds, and forfeiture of such Net, &c., and proof that such person is the occupier of Weir shall be *prima facie* evidence that such Nets were set by him.—Not liable to any penalty on account of using Eel Nets in the Eyes or in Gaps of Weirs, if only hung in four-fifths in number of the Eyes or Gaps of such Weir. And any Person dredging for, taking, catching, or destroying, having in his possession, selling, or buying Oysters or Oyster Brood within the Close Season for Oysters, shall forfeit such Oysters, and pay a sum not exceeding Five Pounds for each Offence. See also Nos. 18 and 21. Minimum of Penalties in any of the foregoing cases Ten Shillings.

Fishing for
Salmon or
Trout in Close
Season.
5 & 6 V. c.
106, s. 36.Having in
possession.
13 & 14 V. c.
88, s. 35.
5 & 6 V. c.
106, s. 36.
Sec. 37.
Appendix.
Oysters.11 & 12 V. c.
92, s. 42.

15. Nothing shall apply to any person who shall catch, or have in his possession Salmon or Trout for the purpose of Artificial Propagation, or other scientific purposes.

Exception
for Scientific
Purposes.
26 & 27 V. c.
114, s. 22.

16. If it be proved to the satisfaction of the Justices that any Boat, Cot, or Curragh, found on or near Waters frequented by Salmon or Trout, has been used for the capture of Salmon or Trout during any part of the Annual or Weekly Close Time, the persons who shall be proved to have used such Boat, Cot, or Curragh, for the capture of Salmon or Trout during the Annual or Weekly Close Time, shall for the first offence be subject to a penalty not exceeding Five Pounds—and for second or any subsequent offence in addition to penalty, Boat, Cot, or Curragh may be seized and Forfeited. Boat not to be Forfeited, if used by some person other than the Owner, and the Owner proves it was so used without his knowledge or consent.

Forfeiture of
Boat in illegal
Fishing.
26 & 27 V. c.
114, s. 18.

NOTE.—Boat also liable to Forfeiture for being used in Fishing for Salmon or Trout in Fresh Water between Eight o'clock Evening, and Six o'clock Morning, except so far as the same may have been used before 1864, within limits of a Several Fishery next above Tidal Flow, and held under Grant or Charter, or by immemorial usage.—See No. 72 "Inland Rivers."

26 & 27 V. c.
114, s. 24.

17. Any person in whose possession any part or portion of a Salmon or Trout shall be found or exposed for sale during the Close Season liable to penalty not less than Ten Shillings and not exceeding Two Pounds for each such Fish; and all persons empowered to enforce the provisions of Act, are authorized to seize all such Salmon or Trout, or any such portion thereof, when found in possession of any person, or exposed for sale during the Close Season. (See also No. 14.)

Having in
possession part
of a Salmon or
Trout during
Close Season.
13 & 14 V. c.
88, s. 35.
11 & 12 V. c.
92, s. 42.

18. During the Close Season for Salmon every Occupier or Farmer of any Fishery shall remove and carry away or cause to be removed and carried away, from such Fishery, and the Weirs, Dykes, and Dams connected therewith, and from the River or Stream in which such Weirs, Dykes, or Dams are placed, and from the Landing Places adjoining thereto, all and every Engine, Spear, Hand Net, or other Net, Inscale, Hecks, and Rails of all Cruives, Boxes, or Cribs, used for the purpose of taking or killing Salmon, and the tops of such Cruives, Boxes, or Cribs, and all Planks and temporary Engines and Fixtures used and required for the fishing of the same; and that all and every obstruction to the free Passage of the Fish in and through each and every such Cruive, Crib, or Box, be wholly removed and carried away, within Thirty-six Hours after the Expiration of the Open Season, and shall not be again placed or allowed to be placed or to remain therein until within Thirty-six Hours of the commencement of such Open Season; and in case any such Occupier or Farmer shall omit or neglect so to remove all and every such Net, Engine, or other Tackle, and every Contrivance or Obstruction as aforesaid, he shall forfeit all such Nets, Engines, or other Tackle or Contrivance as aforesaid, and shall for every such Offence forfeit and pay a Sum not exceeding Fifty Pounds, and shall also for every Day during which he shall suffer such Obstacles and other Things to remain and be unremoved beyond the time prescribed by Act, pay a Sum not exceeding Five Pounds: Provided always, that nothing shall be construed to render liable to any Penalty any person who shall

All Machi-
nery, Nets,
and Tackling
for the taking
of Salmon, &c.
in Salmon
Weirs, or
other fixed
Engines, shall
be wholly re-
moved during
Close Seasons.
5 & 6 V. c.
106, s. 37.
Penalty for
Neglect.

Provide.

APPENDIX,
No. 22.Storm,
Stress of
Weather, &c.
Eels.5 & 6 V. c.
105, s. 58.

be prevented by Floods, Storm, or Stress of Weather from removing any such Net, Engine, or Tackle during the continuance of such prevention; and provided also that the Proprietor or Farmer of any Salmon Weir, now legally entitled by Patent, Charter, or otherwise, to a Right of Fishing for Eels in such Weir, and who has exercised such Right previous to the passing of Act (1842), shall not be liable to any Penalty on account of his placing, hanging, or using Coghill or Eel Nets or Baskets in the Eyes or Gaps of such Weir, if such Coghill or Eel Nets or Baskets be only used in conformity with the provisions of Act, and be only hung in Four-fifths in Number of the Eyes or Gaps of such Weir, and the other One-fifth of such Eyes or Gaps, in addition to the Queen's or Free Pass, be kept open and unobstructed for the free Passage of all Kinds of Fish; and provided also, that nothing herein contained shall be construed to exempt such Proprietor or Farmer from Liability to the Penalties by Act directed in case any Salmon or Trout shall be killed, taken, or caught in such Weir, during Close Season, or in case he shall not keep open and unobstructed, according to the provisions of Act, One-fifth in Number, as aforesaid, of the Eyes or Gaps of the said Weir. The Incales of every Box, Crib, or Cruive shall be wholly taken out during the Close Season, so that the space within the Box shall present no obstruction or obstacle whatever to Salmon passing through such Box, &c.

All Bag, Sole,
Fly, or Stake
Nets and other
Engines for
catching
Salmon in the
Tideway shall
be removed
during Close
Season.
5 & 6 V. c.
106, s. 38.

Forfeiture.

Penalty.

Stress of
Weather.

19. During the Close Season for Salmon, every Proprietor, Lessee, or other Person who shall be engaged in fishing for Salmon by means of Fixed Engines, shall remove and carry away, or cause to be removed and carried away, from the Poles or Fixtures to which they shall be attached, all Stake Nets, Bag Nets, Sole Nets, Fly Nets, or other Devices or Engines used for the purpose of taking Salmon, except where such Nets, Devices, or Engines shall be formed of Wood, Iron, Copper, or other rigid Substance, in which case a clear Opening of Four Feet in width shall be made and maintained in and completely through the Pouches, Traps, or Chambers, of all such Nets, Devices or Engines, from the Top to the Bottom of such Pouches, Traps, or Chambers, and in the Eyes of Flood and Ebb Weirs, commonly called Head Weirs, so as to allow the free passage of Salmon and other Fish through the same, and effectually to prevent the catching or taking of any Fish therein; and in case any such person shall omit or neglect to remove or carry away all such Nets and Engines, or, as the case may be, to make and maintain free from all Obstruction such Openings as aforesaid, during the Times aforesaid, he shall forfeit all such Nets or Engines, and shall forfeit and pay a sum not exceeding Fifty Pounds, and shall also for every Day during which such Nets or Engines shall remain and be unremoved beyond the period prescribed by Act forfeit and pay a sum not exceeding Five Pounds: Provided always, that nothing herein contained shall be construed to render liable to any Penalty any Person who shall be prevented by Storm or Stress of Weather from removing such Nets or Engines, or making such Openings as aforesaid, during the continuance of such prevention.

Nets to be
removed, &c.
13 & 14 V. c.
88, s. 34.
5 & 6 V. c.
106, s. 66.Fixed Engines
for Eels not to
be set between
10th January
and 1st July.
5 & 6 V. c.
106, s. 31.

s. 77.

20. Every Proprietor, Lessee, or other Person who shall be engaged in Fishing for Salmon by means of Nets of any kind, shall remove and carry them away during the Yearly Close Season under a penalty of not less than Two Pounds and Forfeiture of Nets. Penalty for fishing with any Nets whatever except Eel Nets, in Inland Waters during the Salmon Close Season, Ten Pounds.

21. Not lawful for any person between the 10th day of January and 1st day of July (except in such places where the Season may have been altered), to hang or fix any Coghill, Eel or other Net or Basket, or Basket-work, in the Eye, Gap, or Sluice of any Eel or other Weir in any River, or to make use of any other Fixed Engine for taking Eels—or between the 1st July and 10th January, to keep or leave such Net, Basket, or other Engine, Set or in the Water in the Eye, Gaps or Sluices of such Eel or other Weirs between Sunrise and Sunset; and taking, or suffering to be taken, in any Eel Weir any Salmon, or Trout, or Fry thereof—penalty, Ten Pounds.—For Seasons for fishing for Eels with fixed Nets, *see* Appendix.

Angling.
5 & 6 V. c.
106, s. 69.

22. Any person Angling for Salmon or Trout during Close Season liable to penalty not exceeding Five Pounds.

NOTE.—Power in certain persons to Open Passage Shut during Close Season.—*See* 8 & 9 V., c. 108, s. 10. No. 32.

CLOSE TIME.—WEEKLY.

Weekly.
26 & 27 V. c.
114, s. 20.

23. Weekly Close Time, between Six of the Clock on Saturday Morning, and Six of the Clock on Monday Morning.

5 & 6 V. c.
106, ss. 40, 66.
13 & 14 V. c.
88, s. 38.
5 & 6 V. c.
106, s. 66.

24. No person shall Lay, Draw, or Fish with any Nets whatever for Salmon or Trout, or take any Salmon or Trout in any Crib, Box, Cruive, Eye, or Gap, in any Salmon, Eel, or other Weir, or in Fresh Water portions of Rivers use any Net whatever for any kind of Fish (except Nets for taking Eels) during the Weekly Close Season.—*See* 27 & 28.

25. All Fishing for Salmon and Trout, save with Single Rod and Line excepted, prohibited during Weekly Close Season.

Weekly
Close Season.
5 & 6 V. c.
106, s. 40.

26. During such time in each Stake, Flood, Ebb, or Head Weir and Stake Net, a clear opening of at least Four Feet in width shall be made, and kept from Obstruction in the Pouches, Traps, Chambers, or Eyes of the same from Bottom to Top thereof, so as effectually to allow of the free passage of Salmon and other Fish, and the Netting of the Leader of every Bag, Fly, Sole, or other Fixed Net shall be raised and kept out of the water; and in all Rivers, Lakes and Tideways, all other Nets and Baskets whatsoever, except those used for the taking of Eels, shall be wholly removed

and taken out of the water for the space of time above-mentioned; and the Incales or Gates, and Rails, or Framework of all such Cribs, Boxes, or Cruives, for the catching of Salmon, &c., shall be removed out of, or opened in each such Crib, &c., in every Salmon and other Weir wherein Salmon may be caught, in such a manner that a clear opening of not less than Four Feet in width from the Bottom to the Top shall be left therein, and a free, direct, and uninterrupted space or opening of said width shall be effectually secured for the passage of Fish of all kinds, both up and down through such Cribs, &c.—*See also 5 & 6 V. c. 106, s. 58, No. 53.*

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27. Penalty for non-observance, or for using any means or device to prevent the Free Passage, or Frightening or Scaring, or attempting to Frighten or Scare any Salmon from passing, or taking any Salmon during the time specified—not less than Ten Pounds, and not exceeding Fifty Pounds: Provided such person shall not be prevented by Floods, Storm, or Stress of Weather from removing such Leaders, or making such Openings. *See also 28.*

Penalty for non-observance.
13 & 14 V. c. 88, s. 46.

28. In addition to the Penalty provided by the Salmon Fishery Acts, any Net or other Instrument, or the Incales or Gates and Rails of any Crib, Box, or Cruive used between the times aforesaid, shall be Forfeited; and also when any Salmon or Trout is taken at any Fishing Weir during the times aforesaid, or when any Box is left unopened or not in conformity with the Acts, the Penalty shall be payable in respect of each Box or Crib, &c., in which any fish is so illegally taken, or which is left unopened or not in conformity with Acts.

Further Penalty by
26 & 27 V. c. 114, s. 20.

29. Any person Scaring, Impeding, or obstructing the Free passage of Salmon or Trout during the Times aforesaid, shall incur a Penalty not less than Two Pounds, and not exceeding Ten Pounds, with Forfeiture of any Fish taken by him, and any Net or Instrument used by him.

Scaring or obstructing Fish during Weekly Close Season.

This Section does not apply to any Person who takes Fish legally by the Single Rod and Line, during the Weekly Close Season.

26 & 27 V. c. 114, s. 25.

30. If it be proved to the satisfaction of the Justices that any Boat, Cot, or Curragh found on or near Waters frequented by Salmon or Trout, has been used for the Capture of Salmon or Trout during any part of the Annual or Weekly Close Time, the persons who shall be proved to have used such Boat, Cot, or Curragh for the Capture of Salmon or Trout, during the Annual or Weekly Close Time, shall for the first Offence be subject to a Penalty not exceeding Five Pounds, and for second or any subsequent Offence in addition to Penalty, Boat, Cot, or Curragh, may be seized and forfeited.—*See also No. 16.*

Forfeiture of Boat in illegal Fishing.
26 & 27 V. c. 114, sec. 18

31. During the Weekly Close Season, the sluices which admit the water to the wheels of all Mills or Factories and all Waste Gates shall at all seasons of the Year be kept shut for twenty-four consecutive hours in each week, between six o'clock on Saturday afternoon, and six o'clock on Monday morning, so that the water may be allowed to flow freely through any existing Gap in such Weir, or any Fish Passage formed therein, or where no Gap or Fish Pass, through the waste gate on the up-stream side of the wheel sluices of such mill, and the Waste Gates shall in such latter case be kept open. *See 13 and 14 V., c. 88, s. 39—and 5 & 6 V., c. 106, s. 63.—See also 41, 42, 43.*

Sluices of Mills to be kept shut, &c.
5 & 6 V. c. 106, s. 63, and 13 & 14 V. c. 88, s. 39.

32. It shall be lawful for Constabulary and Coast Guard, and any person acting under authority of the Commissioners (now Inspectors), when and as often as they or any of them shall, in any Fishing Weir, Net, or Contrivance, during the Weekly or other Close Season, find any Passage shut, closed, or obstructed, or during such Close Time in any place find any Net or other Contrivance placed or used where the same are now by Law, or may be prohibited by the Commissioners, or shall at any time find any Obstruction in the Queen's Share or Free Gap, through or over any Fishing or other Weir, or in the Sluice Passages appurtenant to any Mill or Factory, at any time when the Sluice Gate of same shall be open, then and so often to Open such Passages and remove all such Obstructions, doing no unnecessary damage; and to seize and remove all Nets and parts of Nets which may be found so Placed or used contrary to Provisions of Act. Nothing to exempt any person from the Penalties and Forfeitures prescribed by Act, in respect to any of the matters aforesaid—not liable for any damage caused by Opening such Passage, or removal of Nets or Obstructions.

Constabulary and Coast Guard empowered to open passages during Close Season.
8 & 9 V. c. 108, s. 10.

COMPLAINTS.

33. All Offences against Act, or any By-Law, &c., may be determined on in a summary way by one or more Justice, on the complaint, verbal or otherwise, of any person.

Offences.
5 & 6 V. c. 106, s. 94.

EEL FIXTURES.

See Nos. 14, 18, 19, 20, 21, 24, 26, 63, 71, 75, 76, 95.

ENTERING LANDS.

34. If any person or persons shall enter upon any Lands or Premises, for the purpose or under the pretence of fishing or angling in any Lake, River, Stream, Pond, or Water, without Authority in Writing, from the Proprietor or Occupier of such Lands or Premises, every such person shall forfeit and pay a sum not exceeding the sum of Two Pounds for every such offence.

Penalty on Persons entering Lands without permission.
5 & 6 V. c. 106, s. 71.

See also "Private Waters."

APPENDIX,
No. 22.

FISHING NEAR MOUTHS OF RIVERS.

Fixed Nets not
to be placed in
Narrow
Channels.
5 & 6 V. c.
106, s. 22.

Or within One
Mile of Mouth
of River, &c.
Ib.

Stretching
Nets across
mouths of
rivers, &c.
5 & 6 V. c.
106, s. 27.
5 & 6 Vic. c. 106,
s. 27, and
13 & 14 V. c.
88, s. 44.

Or so as to be
injurious to
free passage
of Fish.
13 & 14 V. c.
88, s. 44.

Prohibition
of Bag Nets in
certain places.
26 & 27 V. c.
114, s. 3.

Penalty
26 & 27 V. c.
114, s. 3.

Fish Passes.
5 & 6 V. c.
106, s. 63.

Existing
Weirs.
5 & 6 V. c.
106, s. 63.

Penalty.

Further
provisions.
13 & 14 V. c.
88, s. 39.

During
Weekly Close
Season.
5 & 6 V. c.
106, s. 63.
Fishing at
or near Fish
Passages.

35. Not lawful for any Person, save the Proprietor of a Several Fishery in the whole of the Estuary and River, to erect any Fixed Net in such part of any Estuary, or Tidal part of any River frequented by Salmon, where the breadth of the Channel at Low Water of Ordinary Spring Tides is less than Three Quarters of a Mile Statute Measure; unless in cases where the Engine was erected for Twenty Years previous to 1842, or for Ten Years within the limits of a Several Fishery; and not lawful for any Person, save the Proprietor of a Several Fishery within the limits thereof, to erect any Fixed Net within One Mile of the Mouth of any River frequented by Salmon, where the breadth of such Mouth is less than Half a Mile at Low Water of Ordinary Spring Tides. Penalty, not exceeding Thirty Pounds, and forfeiture of Net.

36. Not lawful for any person, save and except the Proprietor of a Several Fishery in the whole of a river and its tributaries, to shoot, draw, or stretch Nets entirely across the Mouth or across any other part of any River. Penalty not exceeding Ten Pounds. Nor lawful for any person, save and except the Proprietor of a Several Fishery, within the limits thereof at any time to use Nets for taking Salmon at the Mouth of any River where the Breadth of such Mouth shall not exceed Quarter of a mile Statute Measure; or within Half-a-mile from the mouth of any River, such Mouth to be defined by the Commissioners. Penalty not exceeding Ten Pounds, nor less than One Pound, and a further Penalty of Five Shillings for every Fish taken, and forfeiture of Net.

37. Not lawful for any person, save the Proprietor of a Several Fishery in the whole of a River and its Tributaries to Shoot, Draw, Stretch, or use Nets at the Mouth, or any other part of any River in such wise as in the judgment of the Commissioners to be injurious to the Free Passage of Fish, and which they shall have prohibited by Bye-Law. Penalty not exceeding Ten Pounds, nor less than One Pound, and a further Penalty of Five Shillings for every Fish taken: and forfeiture of Net.

NOTE.—For Mouths of Rivers defined—see Appendix.

38. No Bag Net shall be placed or allowed to continue in any River, or the Estuary of any River, as such River or Estuary has been defined by the Commissioners, or shall be defined by the Commissioners, or within a distance of less than Three Statute Miles from the Mouth of any River, as defined. But where Owner of Bag Net within Three Miles of the Mouth of any River, has the exclusive right of catching Salmon in the whole of such River, and all Tributary Rivers and Lakes on its course, foregoing Provision as to Three Miles shall not apply.

39. Any Bag Net placed in contravention of foregoing Provision may be taken possession of or destroyed, and any Salmon taken therewith shall be forfeited.—Penalty not less than Five Pounds, and not exceeding Twenty Pounds for every Day Bag Net so placed.

FISH PASSAGES.

40. All Dams, Weirs, Dykes, or other Erections which shall after the passing of Act (1842), be placed in or across any River frequented by Salmon, shall be so built as to permit the free run or migration of Salmon and other Fish at all periods of the year, and at the expense of person forming such Weir, &c., and in such manner as the Commissioners shall approve.

41. In all Weirs, Dams, or Dykes at present (1842) erected in or across such Rivers, lawful for the Commissioners, on the application of one or more persons interested in the Fishing of such River, and at the Costs and Charges of such persons to direct such alterations to be made therein, or such additional work to be added thereto, as shall in the opinion of the Commissioners be necessary and desirable for the purpose of affording a free and uninterrupted passage to Fish—Not to impair Navigation or lessen or impair the effective working power of Mill or Factory. And where such means of migration of Fish (or Fish Passes) have been built in Weirs, the Owners or Occupiers of all such Mills or Factories are required at any time during which such Mill or Factory shall not be at work, or where the Water-wheel or Watercourses thereof shall not be undergoing such repairs as shall require the Water above such Mill to be run off, to stop and close up in dry seasons all other Waste Gates or Overfalls, so as to direct and force the surplus Water of such River or Stream through the Fish Passage: Penalty for non-observance, any sum not exceeding Five Pounds.

42. The Waste Sluices, Waste Gates, or Overfalls, shall at all seasons of the year, when and during the time the Mills or Factories shall not be used for Milling Purposes, be kept open, if no passage for Fish be provided; and when such passage provided, the Sluices which admit the Water, and the Waste Sluices, Waste Gates, and Overfalls, shall be kept down and shut to force the water through such passage for Fish. Penalty for neglect not less than Two Pounds, nor more than Ten Pounds for every offence.—No injury to be done by the Opening or Shutting of such Sluices, to the Machinery or Water Power.

43. During the Weekly Close Season the Sluices, &c., shall at all seasons of the year be kept shut up for Twenty-four consecutive hours in each week, so that the water may be allowed to go freely through any existing Gap or Passage in such Weir, &c.

44. It shall not be lawful for any person to take, kill, or destroy any Salmon or other Fish, or hang, fix, use or set in such Fish Passage made through natural obstructions, Mill-dams, Weirs, or other similar Works, any Net, Basket, or other Engine or Contrivance whatsoever for the taking

of Fish, or to place any Obstacle or Contrivance of any kind soever, in or near thereto, in order to deter Fish from freely entering or passing up and down through the same, at all periods of the year, but the Fish Pass shall be kept and preserved free from every Obstruction, and all such Obstructions shall be removed in like manner as in the case of Free Gaps and Queen's Shares in Fishing Weirs. Penalty any sum not exceeding Twenty Pounds.—If offence committed by person in employment or under control of Owner or Occupier of Mill, or with the knowledge or connivance of Owner or Occupier or Person in charge of Mill, or through default of reasonable precaution on the part of the Owner or Occupier to prevent offence, then Owner or Occupier liable to penalty.

APPENDIX,
No. 22.

5 & 6 V. c.
106, s. 64.
Penalty.

45. No fishing (Rods and Lines only excepted) allowed within Two Hundred Yards of a Mill-dam, unless such right has been exercised for Twenty Years before passing of Act (1850).—Penalty not less than Two Pounds nor more than Ten Pounds, and Forfeiture of Net—nor within Fifty Yards of a Mill-dam, unless there be attached thereto a Fish Pass approved by the Commissioners, nor unless it shall have constantly running through it such a Flow of Water as will enable Salmon to pass up and down it. See also No. 93.

Fishing near
Mill-dams.
13 & 14 V. c.
88, s. 87.
26 & 27 V. c.
114, s. 16.

46. Salmon Passes and Fish Ladders shall be at all Times open to the Inspection of the Commissioners, and the Conservators of the District, and of any Person duly authorized by them or any of them.

To be open to
Inspection.
26 & 27 V. c.
114, s. 81.

FISHING WEIRS.

47. Within Twelve Months after the commencement of this Act (Act dated 28th July, 1863), Free Gaps shall be made in all Fishing Weirs according to the following Regulations:—Penalty not less than Five Pounds and not exceeding Fifty Pounds for every Day after the expiration of such period of Twelve Months, during which Free Gaps are not made:—

Free Gaps in
Fishing Weirs.
26 & 27 V. c.
114, ss. 9 & 12.

The Free Gap shall be situate in the deepest part of the Stream:

Sec. 9.

The Sides of the Gap shall be in a Line with and Parallel to the Direction of the Stream at the Weir:

The bottom of the Gap shall be level with the natural Bed of the Stream above and below the Gap.

The Width of the Gap in its narrowest Part shall be not less than One-tenth Part of the Width of the Stream: Provided always, that such Gap shall not be required to be wider than Fifty Feet, and shall not in any case be narrower than Three Feet: and provided also, that no existing Gap in any Weir shall be reduced in width, or a Gap of less width substituted in lieu thereof, or any Alteration made therein so as to reduce the Flow of Water through such Gap:

Where a Free Gap has been made in a Weir, but the same is not maintained in accordance with Act, the owner of such Weir shall incur a Penalty not exceeding Five Pounds a Day for each Day he is in default:

Sec. 12.

No alteration shall be made in the Bed of any River in such manner as to reduce the Flow of Water through a Free Gap: If it is, the person making the same shall incur a Penalty not less than Five Pounds and not exceeding Fifty Pounds, and a further Penalty of One Pound a Day until he restores the Bed of the River to its original State.

48. No person shall place any Obstruction, use any Contrivance, or do any Act whereby Fish may be scared, deterred, or in any way prevented from freely entering and passing up and down a Free Gap at all Periods of the Year, or shall use any Nets or other Engines within Fifty Yards above or below any Free Gap; and any person placing any Obstruction, using any Contrivance, Net or Engine, or doing any Act in contravention of the Regulation lastly hereinbefore contained, shall incur a penalty not less than Five Pounds and not exceeding Twenty Pounds for the First Offence, and not less than Ten Pounds and not exceeding Fifty Pounds for each subsequent Offence. See also No. 50.

Obstructing
or deterring
Fish from
entering.
26 & 27 V. c.
114, s. 12.

49. In any case where the Breadth of the River where any Chartered or Patent Fishing Weir now exists shall not exceed Forty Feet, and it might be inexpedient to require a Free Gap to be made therein, the Commissioners may, if they think fit, instead thereof, direct by their Order the Extension of the Weekly Close Time for a Period of Twenty-four Hours.—(See Appendix.)

Extension of
Weekly Close
Season, where
Gap inexpe-
dient.
26 & 27 V. c.
114, s. 11.

50. No person shall Fish with Rod and Line, or in any other manner, in any Part of the Free Gap or Queen's Share, in any Weir in any River, or hang, fix, set, or use, within the space of Fifty Yards above or below any part of such Weir, any Net, Basket, or other Engine for the taking of Fish or in order to deter or prevent Fish from going up or down the same or place any obstruction, or throw any Gravel, Clay, Stones, or other matter into the same, nor shall beat the Water, or place or set any bridge, board, cloth, or any other thing in, over, or across the same, save a temporary bridge or board during the time only when the person engaged in fishing said Weirs shall be passing over the same, nor shall in any manner prevent the free and uninterrupted passage of Fish through the same, at all Periods of the Year; Penalty for every Offence, a sum not exceeding Thirty Pounds; and all such Obstructions shall be removed at the expense of such person upon the Order of the Justices imposing penalty; proof that such person is the Occupier or Owner of such Weir shall be taken as *prima facie* that such Obstructions were placed by him.

No obstruc-
tions to be
placed near
Queen's share,
nor shall any
person fish in
or near same.
5 & 6 V. c.
106, s. 57.

APPENDIX,
No. 22.Boxes and
Cribs.
26 & 27 V. c.
114, s. 10.

51. The following Rules shall be observed in relation to the construction of Boxes and Cribs in Fishing Weirs and Fishing Mill-dams :—

The Upper Surface of the Sill shall be level with the Bed of the River :

The Bars or Incales of the Heck or Upstream side of the Box or Crib shall not be nearer each other than Two Inches, and shall be capable of being removed, and shall be placed perpendicularly :

The Boxes, Cribs, or Cruives shall not be built over, or in any other manner hidden from public Inspection.

NOTE.—Power in Commissioners to authorize the lessening of the width between the bars where the principal or a considerable part of the value of any Weir has consisted in catching Trout. 5 & 6 V., c. 106, s. 58—Appendix.

Penalty.

52. Penalty for not making Boxes and Cribs in conformity with foregoing regulations not less than Five Pounds, and not exceeding Twenty Pounds for every day of failure in complying with these Provisions; and not less than One Pound, and not exceeding Five Pounds for every day failing to maintain Boxes accordingly.

Further Regu-
lations as to
Boxes in
Weirs.
5 & 6 V. c.
106, s. 58.

53. During the Weekly Close Season the Incales of every Box, Crib, or Cruive, used for the taking of Salmon, shall be opened to the full width of Four Feet, and the Upstream Rails shall be entirely removed or taken out, or so opened and fastened back that a Space of Four Feet shall be completely free and clear in each such Box, Crib, or Cruive. See also 56.

Spur and Tail
Walls.
5 & 6 V. c.
106, s. 54.

54. It shall not be lawful to construct or attach to, or permit to remain if already constructed or attached to any Cruive Weir or Cruive Dam used for fishing in any river any Spur or Tail Wall, Leader or Outrigger, of any kind or description whatever, of a greater length than Twenty Feet, from the Upper or Lower side respectively of the Walls or Piers of such Weir or Dam, except the Wall or Leader connecting the Cribs of such Weir or Dam with the Bank of the River; nor shall any such Wall, Leader or Outrigger, be so built or constructed as to narrow up or prevent the ingress or discharge of the water through or from the Free Opening or Queen's Share in River or Stream; nor shall any Island or natural formation in any River be so made use of as to secure the proprietor of any Fishery the same advantage which such proprietor would have obtained by the erection of a Tail Wall of greater length than Twenty Feet; nor shall any such Walls or Leaders be constructed or suffered to remain in Narrow Rivers or other places of a greater length than the Commissioners upon application made to them for that purpose, shall determine and approve.—Penalty not exceeding Twenty Pounds and Five Pounds a Day.

5 & 6 V. c.
106, s. 55.

Not to extend to Weirs, Banks, or Heads used for sustaining Mills and Navigation, if such shall not be made use of for the purpose of taking Fish.

Boxes or Nets
not to be used
within Fifty
Yards of
Milldam.
26 & 27 V. c.
114, s. 16.
During
Weekly Close
Season.
26 & 27 V. c.
114, s. 16.

55. No Box, Crib, Cruive, Net or other Instrument (Rods and Lines only excepted), shall be used at or within Fifty Yards of a Mill-dam, unless there is attached thereto a Fish Pass approved by the Commissioners, and which shall have constantly running through it such a Flow of Water as will enable Salmon to pass up and down it. See also 93.

56. Any Net or other Instrument, or the Incales or Gates and Rails of any Crib, Box, or Cruive used during the Weekly Close Season to be Forfeited; and when any Salmon or Trout taken during such time, or when any Box, Crib, or Cruive is during such time left unopened, the penalty shall be in respect of each Box, &c., in which any Fish is so taken or is left unopened.

For Fishing Weirs in Ireland, see Appendix.

FIXED NETS.

Prohibition of
Bag Nets in
certain places.
26 & 27 V. c.
114, s. 3.

57. No Bag Net shall be placed or allowed to continue in any River, or the Estuary of any River, as such River or Estuary has been defined by the Commissioners, or shall be defined by the Commissioners, or within a distance of less than Three Statute Miles from the Mouth of any River, as defined. But where Owner of Bag Net within Three Miles of the Mouth of any River, has the exclusive right of catching Salmon in the whole of such River, and all Tributary Rivers and Lakes of its course, foregoing provisions with respect to Three Miles does not apply. No Bag Net allowed within any Estuary of a River as defined.

Penalty.
26 & 27 V. c.
114, s. 3.

58. Any Bag Net placed in contravention of foregoing provisions may be taken possession of or destroyed, and any Salmon taken therewith shall be forfeited. Penalty not less than Five Pounds, and not exceeding Twenty Pounds for every Day Bag Net so placed.

Penalty on
New Fixed
Nets.
26 & 27 V. c.
114, s. 4.

59. No Fixed Net that was not legally erected for catching Salmon or Trout, during the open Season of One thousand eight hundred and sixty-two, shall be placed or used for catching Salmon or Trout. Any Net placed or used contrary hereto may be taken possession of or destroyed; and any Salmon taken forfeited, and the Owner thereof is liable to a Penalty not less than Five Pounds, and not exceeding Twenty Pounds for each Day of so placing or using the same.

Regulations
as to.
5 & 6 V. c.
106, s. 20.

60. No engine formed of Wood, Iron, or other rigid material having Meshes or Openings of less width than Three Inches on each side of the Square, and where no Meshes or Openings of the nature of reticulations shall be used of less width between the Bars than Two Inches, shall be used on any part of the Coast, or in any Bay, Estuary, or Tideway, save by the Proprietor of the whole of the Fishery of the River flowing into such Bay, or from the Mouth to the Source thereof including Tributaries. Penalty not exceeding Ten Pounds. Power in Commissioners to alter Meshes.—See Appendix.

61. Not lawful for any Person, save the Proprietor of a Several Fishery in the whole of the Estuary and River, to erect any Fixed Net in such parts of any Estuary, or Tidal part of any River frequented by Salmon, where the breadth of the Channel at Low Water of "Ordinary" Spring Tides is less than Three Quarters of a Mile Statute Measure; and not lawful for any person, save the Proprietor of a Several Fishery within the Limits thereof, to erect any Fixed Net within One Mile of the Mouth of any River frequented by Salmon, where the breadth of such Mouth is less than Half a Mile at Low Water of "Ordinary" Spring Tides. Penalty, not exceeding Thirty Pounds, and forfeiture of Net.

APPENDIX,
No. 22.

Fixed Nets not to be erected in Narrow Channels. 5 & 6 V. c. 106, s. 22. 26 & 27 V. c. 114, s. 19.

62. Stake Nets shall not extend further than from High to Low Water Mark of Ordinary Spring Tides, save and except in the case of Ebb and Flood Weirs, commonly called Head Weirs; nor shall any such Weir be so constructed as to be capable of taking Young or Unsizeable Fish. The Netting of all Fixed Nets shall be extended evenly, so that the Meshes shall be stretched to their full opening. Bag Nets shall be so placed that the Leaders can be kept and raised out of the Water. Stake Nets shall be so placed that clear openings of at least Four Feet in width shall be made and kept from obstruction in the Pouches, Traps, Chambers, or Eyes of the same, from the Bottom to the Top, so as effectually to allow the free passage of Salmon and other Fish through such Pouches, Traps, Chambers and Eyes during the Weekly Close Time.

Stake Nets not to extend beyond low water mark. 5 & 6 V. c. 106, s. 26. Ordinary. 26 & 27 V. c. 114, s. 19. 5 & 6 V. c. 106, s. 26.

NOTE.—By the 44th Section 26th and 27th V. c. 114, a "Head Weir" is now included under the expression "Fixed Net."

5 & 6 V. c. 106, s. 40.

63. Fixed Engines for Eels not to be used between 10th January and 1st July, save where Season may be altered—or between 1st July and 10th January between Sunrise and Sunset. For Places where this Season has been altered, *see* Appendix. And any Person taking, or suffering to be taken, in any Eel Weir, any Salmon, or Trout, or Fry thereof, liable to a penalty of Ten Pounds.

For Eels. 5 & 6 V. c. 106, s. 31. S. 77.

64. Any person who shall Fish with, make use of, or erect any Fixed Engine for the capture of Salmon without having obtained a Certificate for same, shall forfeit such Fixed Engine and incur a penalty of Fifty Pounds and a further Penalty of Twenty Pounds for every day during which it shall have been erected, used, or fished with; and any person authorized to enforce provisions of Acts, may seize and take possession of such Fixed Engine.

Penalty for Fishing with Fixed Engine for Salmon without Certificate. 32 & 33 V. c. 92, s. 16.

For Certificates issued, *see* Appendix.

65. In all cases where any person has any right of Appeal against any Judgment, Order, Proceeding, or Conviction for placing, erecting, maintaining, or using any Fixed Net or Engine, or any part thereof, such Appeal shall be to the next going Judges of Assize at the Assizes to be held for the County, or for the City or place where such Judgment, &c., shall have been given, or such alleged offence shall have been committed; provided that such Assizes shall be held at any time not less than Twenty-one days after the time such Judgment, &c., shall have been given; and in case such Assizes shall be held within Twenty-one days from the time of such Judgment, &c., such Appeal shall be to the going Judges of Assizes to be holden next but one after such Judgment, &c.—and no such Appeal shall be allowed unless the party appealing shall within Ten Days next after, or if the Court appealed from shall think fit so to require it, immediately on the pronouncing of such Judgment, &c., enter into a recognizance with Two sufficient Sureties in a Sum not less than £50, to appear at the said Assizes, and abide the Judgment of the said Judges there, and to pay such costs and expenses as the Judges at Assizes may award against him.

Appeal against Convictions for erecting or using any Fixed Net. 13 & 14 V. c. 88, s. 51.

For Mouths of Rivers defined, *see* Appendix.

For Fixed Nets in Ireland, *see* Appendix.

FRY.

66. If any person shall wilfully take, sell, purchase, or have in his possession, the Spawn, Smelts, or Fry of Salmon or Trout, or of Eels, or in any way, or by any Device wilfully obstruct the Passage of the said Smelts or Fry, or injure or disturb any Spawn or Fry, or any Spawning Bed, Bank, or Shallow where the same may be, such person shall forfeit and pay a sum not exceeding Ten Pounds for each and every such Offence, and all Nets, Engines, and Devices, used in the taking of the same, or whereby any such injury shall be caused shall be forfeited. Nothing shall apply to having in possession Salmon or Trout for Artificial Propagation or other Scientific Purposes—nor prejudice the right of any owner to take materials from any stream.

Penalty for having, taking, or attempting to take Fry and Spawn of Salmon, Trout, or Eels, 5 & 6 V. c. 106, s. 78. 26 & 27 V. c. 114, s. 22.

67. The word "Salmon" shall extend to and include Grilse, Peale, Sea Trout, Samlets, Par, &c., and the Spawn and Fry thereof.

13 & 14 V. c. 88, s. 1.

68. And the words "Jenkin," "Gravelling," are deemed to be Salmon.

26 & 27 V. c. 114, s. 14.

ILLEGAL NETS.

69. In case any officer or person authorized and empowered to seize Illegal Nets or Engine, or Nets or Engines of a legal form and size, when used contrary to the Provisions of Act or any of the Bye-Laws to be made in pursuance of Act, shall seize the same, it shall and may be lawful for him to retain the same in his custody until the next sitting of the Petty Sessions Court, or any adjournment thereof, in the District where the same shall be seized, and at such Petty Sessions Court it shall and may be lawful for the Justices to order and direct the same to be Forfeited, and in case the same shall be such as cannot be legally used according to the provisions of Act, to order the same to be

Illegal Nets shall be brought before Magistrates at Petty Sessions, and destroy ed. 5 & 6 V. c. 106, s. 103.

APPENDIX,
No. 22.

And Legal
Nets when
used Illegally
shall, upon
being forfeited,
be sold.

Boats.
26 & 27 V. c.
114, s. 18.

Taking Salmon
in Inland
Rivers.
5 & 6 V. c.
106, s. 65.

5 & 6 V. c.
106, s. 66.

Nets during
certain hours
in Rivers
prohibited.
26 & 27 V. c.
114, s. 24.

Fishing with
Nets near Mill-
dams.
26 & 27 V. c.
114, s. 16.

Turbines, or
other Ma-
chines.
26 & 27 V. c.
114, s. 30.

Fishing with
False-bottomed
Nets, or Nets
one behind the
other, &c., &c.
5 & 6 V. c.
106, s. 66.

Engines for
Salmon, &c., to
be Licensed.
11 & 12 V. c.
92, s. 8.
26 & 27 V. c.
114, s. 26.

Saving for
Trout, &c.
11 & 12 V. c.
92, s. 21.

White Trout.
13 & 14 V. c.
88, s. 1.
11 & 12 V. c.
92, s. 30.

11 & 12 V. c.
92, s. 31.

Licences for
Angling not
transferable.
32 & 33 V. c.
92, s. 17.

destroyed, and in case the same shall be such as may be legally used, according to the provisions of Act, that then and in such case it shall be lawful for such Justices to order the same to be sold, and the money arising therefrom to be applied in the same manner as the penalties imposed for violation of the provisions of Act are directed to be applied. See No. 105.

70. Boats may also be forfeited in certain cases for breach of Annual or Weekly Close Season.—See Annual and Weekly Close Seasons, Nos. 16 and 30.

INLAND RIVERS.

71. In the Inland and Fresh Water portions of Rivers and Lakes in Ireland, no person, save the Owner of a Several Fishery within the Limits thereof, shall, at any period of the year, lay, draw, make use of, or fish with Haul, Draft, Seine or other Net, for the taking of Salmon or Trout, unless in cases where a general public Right of Fishing for Salmon with such Nets, in the nature of a common of Piscary,* has been enjoyed for a space of Twenty Years next before the passing of Act; and if any person shall offend contrary hereto, such person so offending shall forfeit all such Nets so used, and shall also forfeit and pay a sum not exceeding Ten Pounds. Penalty for fishing with any Nets whatsoever, except Eel Nets, in Inland Waters, during the Salmon Annual or Weekly Close Season, not exceeding Ten Pounds.

* NOTE.—The claim of the right in the public to fish in Fresh Water Rivers cannot be sustained.—Murphy v. Ryan, C. P. 1868.

72. No person shall use any Net except a Landing Net, for the capture of Salmon or Trout in the Fresh Water portion of any River, as defined by the Commissioners, between the hours of Eight o'clock in the Evening and Six o'clock in the Morning, except so far as the same may have heretofore been used within the limits of a Several Fishery, next above the Tidal Flow, and held under Grant or Charter, or by immemorial usage. Penalty not exceeding Ten Pounds, and forfeiture of all Boats, Nets, and Gear.

For Tidal and Fresh Water Limits—See Appendix.

73. No person shall use any Box, Crib, Cruive, Net, Instrument, or Device for taking Fish (save and except Rods and Lines only), at or within Fifty Yards either above or below a Mill-dam, unless there is attached to such Mill-dam a Fish Pass of such Form and Dimensions as may be approved by the Commissioners, nor unless such Fish Pass has constantly running through it such a Flow of Water as will enable Salmon to pass up and down it.—Penalty not less than Five Pounds, and not exceeding Twenty Pounds.

See also No. 93.

74. Where Turbines or similar Hydraulic Machines are used, the person owning or using same shall, during the descent of Salmon, or Young of Salmon to the Sea, provide a Grating or other efficient means to prevent such Salmon or Young of Salmon passing into such Machine. Penalty not exceeding Fifty Pounds, and Five Pounds a Day.

75. No person shall make Use of or Fish with any Net formed with a False Bottom (except Nets for the taking of Eels), or shall place Two or more Nets, one behind the other, or use any Nets Covered with Canvas, Hide, or other Substance, for the purpose of taking Small Fish, or shall affix, or keep up continued Nets stretched across any River; or place, affix, or attach any Nets to any Stakes, Bridges, Sluices, Lock-gates of Canals, or other such fixed erections. Penalty, forfeiture of Net, and any sum not exceeding Ten Pounds.

NOTE.—As to Cross Lines in—see No. 83.
As to Meshes of Nets in—see No. 88.

LICENCES.

76. All Engines, Nets, Instruments or Devices whatsoever, used for the taking of Salmon, Trout, Pollen, or Fish of the Salmon and Trout kind, or for the taking of Eels, and all Fixed Salmon, Trout, or Eel Fisheries within any District, or on or off the Sea Coast thereof, shall before the same be used in any year, be duly licensed and rated, upon payment of the Licence Duty or Rate, as the case may be. For amount of Licence Duty—see Appendix.

77. Rods used singly for taking Trout, Perch, Pike or other Fish, save and except Salmon, shall not be subject to any Licence Duty.

78. Rods used for taking White Trout subject to Licence Duty—see definition of "White Trout."

79. If any person shall have paid a Licence for a Rod within any District, such person shall not be liable to pay an additional sum for a Licence in any other District, by reason only of Angling with a Rod in any other District.

80. But no Licence confers on the holder any right to fish, not otherwise possessed.

81. Every Licence to fish with Single Rod and Line shall have the name and address of the person to whom the same shall be sold written thereon in clear and legible characters, and such Licence shall not be transferred to or available to any person except the person named there. Penalty for breach, same as for fishing without Licence.—See 84-86.

82. Cross Lines for any description of fish liable to Licence Duty.

APPENDIX,
No. 22.

83. Not lawful for any person (save the proprietor of a Several Fishery, or any person duly authorized by him, in writing) to use Cross Lines for the capture of Salmon or Trout in any River—Penalty not exceeding Five Pounds.

Cross Lines prohibited, &c.
5 & 6 V. c.
106, s. 70.

84. Penalty for using Engines subject to Licence Duty without the same being duly Licensed for such year, not less than double or more than treble the Licence Duty which the Engine would for the time be subject to, and Forfeiture of Engine, such Engine to be sold or otherwise disposed of as the Magistrate shall deem fit, and the entire proceeds thereof shall be added to the general funds of the District in which the same shall be used or erected.

Using Engines without Licence.
11 & 12 V. c.
92, s. 22.
13 & 14 V. c.
88, s. 12.
Forfeiture to be applied to District.
Licences to be produced.
11 & 12 V. c.
92, s. 29.

85. Persons using Engines for fishing, or having the same erected or in Fishing Order, or found with the same in his possession in or near any Fishing Place, required to produce Licence to any Commissioner, Conservator, Inspector, or Officers or Men of the Navy, Coast Guard, or Constabulary, or Water Bailiff, when demanded. Penalty same as in No. 84.

86. Licences to be printed, and stamped with the Seal of the Board of Conservators of the District from which it was issued; and the year for which such Licence shall issue, and a name, number or letter describing the District and the Electoral Division, and the name of the Engine for which same shall be issued shall also be printed thereon in clear and legible characters—such Licence only good and valid for the year and purpose for which it shall be issued.

Licences to be printed, &c.
11 & 12 V. c.
92, s. 28.

LIMITATION OF ACTIONS.

87. No person shall be convicted of any Offence committed against the provisions of Act, unless the prosecution shall be commenced within Six Calendar Months from the time of the commission of such offence.

Actions.
5 & 6 V. c.
106, s. 110.

MESHES OF NETS.

88. Nets for the capture of Salmon and Trout (or for any kind of Fish in the Inland or Fresh Water portions of Rivers) to be of not less size than one and three-quarter inches from knot to knot, measured when the Net is Wet.

Size of Meshes of Nets.
8 & 9 V. c.
108, s. 11.

NOTE.—Commissioners of Fisheries (now Inspectors) are empowered to alter the size of Meshes of Nets by any Bye-Law.—For alterations made, see Appendix.

MILLS AND SLUICES.

89. The Waste Sluices, Waste Gates, or Overfalls of the Weirs of any Mill or Factory deriving their supply from Rivers frequented by Salmon, shall, at all Seasons of the year when and during the time such Mills or Factories shall not be used for Milling purposes, be kept open if no passage for Fish be provided; and when such passage for Fish shall be provided, then the Sluices which admit the Water to such Mills or Factories, and the Waste Sluices, Waste Gates, or Overfalls shall be kept down or shut to force the Water through such passage for Fish, as provided by 5 & 6 Vic., c. 106; and if the Owners of any such Mill or Factory, not used for Milling purposes as aforesaid, shall omit to keep any such Sluice or Sluices, Waste Gates, or Overfalls shut as aforesaid, or open as aforesaid, he shall forfeit and pay a sum not less than Two Pounds, nor more than Ten Pounds for every such offence: Provided always that the opening or shutting of such Sluices, Waste Gates, or Overfalls, shall not in any way injuriously interfere with the Machinery or Water Power of any Mill or Factory.

Mill Sluices to be opened or shut as by Law required at all times when Mills are out of use.

Fish Passes.
13 & 14 V. c.
88, s. 39.

90. Where Turbines or similar Hydraulic Machines are used, the person owning or using same shall, during the descent of Salmon or Young of Salmon to the Sea, provide a Grating or other efficient means to prevent such Salmon, or Young of Salmon, passing into such Machine: Penalty not exceeding Fifty Pounds, and Five Pounds a Day.

Turbines or other Hydraulic Machines.
26 & 27 V. c.
114, s. 30.

91. The exemption from compliance with the 76th section of the 5th & 6th Vic., c. 106, which directs, that in all Watercourses, Cuts, Channels, or Sluices for the purpose of conveying water from any River frequented by Salmon, there shall be placed and fixed by the occupier, at their points of divergence from and return to such River, and below such Sluices, a Grating or Lattice (the space between the bars whereof shall not exceed two inches in any place), extending across the whole width of such Watercourses, &c., shall extend only to such cases in which and for such periods during which it shall be proved to the satisfaction of the Inspectors of Irish Fisheries, that such exemption is necessary for the effective working of any machinery.

Gratings to be placed in all Watercourses.
32 & 33 V. c.
9, s. 4,
and 5 & 6 V. c.
106, s. 76.

This section includes a Wire Lattice or Net-work, to be stretched over such Grating during the time when the Fry of Salmon or Trout shall be descending, and the exemption above refers to such Net-work.

MILL-DAMS AND WATERCOURSES.

92. If any person shall, at any Season of the year, in any Mill Pond or Mill-dam, or in any Works appurtenant to any Mill or Factory, or in any of the Watercourses leading the Water to or from such Mill or Factory, place, lay, set, or draw any Net, Grate, Creel or other Engine, or use any Means or Device whatsoever (save and except Rod and Line used subject to the provisions of Act), for the purpose of taking, destroying, or obstructing any Salmon or other Fish, or the Fry thereof, every such person so offending shall for every such offence forfeit and pay a sum not exceeding Ten Pounds, and shall also forfeit such Nets or other Engines; and in case the person who shall have actually committed any such Offence shall not be known or found, and if such Offence shall

Penalty for any Person taking or attempting to take Fish or the Fry of Fish, in Works appurtenant to Mills or

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Factories, or in
Watercourses
diverted from
Rivers for
such purposes.
5 & 6 V. c.
106, s. 75.

have been committed by means of shutting down or closing any Gate or Sluice which is under the exclusive power of the Occupier of any Mill or Factory, or if such Offence shall have been committed under such circumstances as shall appear to the Justice or Justices before whom any Complaint thereupon shall be made, to afford reasonable grounds for believing that such Offence was committed by some person in the employment or under the control of the Owner or Occupier of such Mill or Factory, or that it was committed with the knowledge or connivance of such Owner or Occupier, or the person in charge of such Mill or Factory, or through the default of reasonable precaution on the part of such Owner or Occupier to prevent such Offence, then and in every such Case, such Owner or Occupier of such Mill or Factory shall be deemed and taken to be liable to and shall incur the Penalty and Forfeiture aforesaid, as if such Offence had been actually committed by him.

Taking Fish
near Weirs.
13 & 14 V. c.
88, s. 37.

93. No Net, Instrument, or Device, for taking Fish (save and except Rods and Lines only), shall be used within Two Hundred Yards of any Weir used for supplying Water to Mills, &c., or for Navigation, either above or below the same:—Penalty for every such offence not less than Two Pounds, nor more than Ten Pounds, and Forfeiture of Net, &c. Where such right has been exercised in any such place by any person lawfully possessed of a Several Fishery therein, for Twenty Years next before passing of Act, he shall not be subject to the penalty provided. But such person shall not use any Engine (save and except Rods and Lines only), at or within Fifty Yards above or below a Mill-dam, unless there be attached to such Mill-dam a Fish Pass of such Form and Dimensions as may be approved by the Commissioners, and that such Fish Pass shall have constantly running through it such a flow of Water as will enable Salmon to pass up and down it—Penalty not less than Five Pounds and not exceeding Twenty Pounds.

Proviso.
Taking with
Nets near Mill-
dams.
26 & 27 V. c.
114, s. 16.

Definition of
"Fishing Mill-
dam."
26 & 27 V. c.
114, s. 44.

94. "Fishing Mill-dams" shall mean a Dam used, or intended to be used, partly for the purpose of catching or facilitating the catching of Fish, and partly for the purpose of supplying Water for Milling or other purposes.—See also "Fishing Weirs."

NETS.

Regulations
as to.
5 & 6 V. c.
106, s. 66.

95. No person shall, in the fresh-water portion of any inland River or Lake, make use of or Fish with any Net formed with a false bottom (except Nets for taking Eels), or shall place two or more Nets one behind the other, or use any Nets covered with canvas, hide, or other substance, for the purpose of taking small Fish, or shall affix or keep up continued Nets stretched across any River; or shall Fish with any Nets within the limits of a Several Fishery without a Licence in writing from the Owner or Renter of such Fishery (*see* 116)—or shall place, affix, or attach any Nets to any stakes, bridges, sluices, lock-gates of Canals, or other such fixed erections—Penalty not exceeding Ten Pounds.

Regulations as
to Sea Nets.
5 & 6 V. c.
106, s. 6.

96. No Net or other Engine covered with Canvas, Hide, or other Material, by which unsizeable and Young Fish may be taken or destroyed, shall be used on the Sea Coast, or within any Estuary except for the purpose of dredging for Shell Fish—Penalty not exceeding Ten Pounds, and forfeiture of Net.

No Herring or
other Nets,
save as herein
provided, to be
shot or left
floating in the
day time.
5 & 6 V. c.
106, s. 7.
7 & 8 V. c.
108, s. 7.

97. No Person shall at any Time between sunrise and sunset, set, either in the Sea or within the Tideway in any Estuary, any Sea Net for the catching of Herrings, or any Trammel Net, or leave any Drag or other Net in the Water between sunrise and sunset, except Stake or Fixed Nets for the catching of Salmon, and save also Seines for the catching of Herrings, or Drift Nets for Pilchards or Fish other than Herrings, provided such Stake or Fixed Nets, and such Seines or Drift Nets, be used at such times and places as may not be prohibited by any Bye-law—Penalty not exceeding Ten Pounds, and forfeiture of Net.

Penalty for
not hauling up
Nets.
5 & 6 V. c.
106, s. 8.

98. Every Person who shall, between sunset and sunrise, have set, either in the Sea or within the Tideway in any Estuary, any such Net as is prohibited from being left set, or in the Water between sunrise and sunset, shall before sunrise haul up and remove such Net or Nets—Penalty not exceeding Five Pounds, and forfeiture of Net. Proviso as to being prevented by Storm or Stress of Weather.—See Appendix for places where Trammel Nets are allowed during day-time.

Trawl or
Trammel Nets.
5 & 6 V. c.
106, s. 9.

99. Every person who shall use any Trawl or Trammel Net at any Season, or any Place, either in the Sea or within the Tideway in any Estuary, when, or where the use of the same shall have been prohibited by any Bye-law, shall forfeit such Net, and pay a Penalty not exceeding Twenty Pounds—See Appendix for Bye-laws relating thereto.

Nets or Lines
not to be set or
laid contrary to
Bye-laws.
5 & 6 V. c.
106, s. 10.

100. No person shall set any Net, at or across the entrance of any Bay or Estuary in any place or at any Time, which shall be prohibited by any Bye-law—Penalty not exceeding Five Pounds.

Stake Nets not
to extend
further than
from High to
Low Water
Mark.
5 & 6 V. c.
106, s. 26.
26 & 27 V. c.
114, s. 19.
Leaders of Bag
Nets to be
raised.

101. No Stake Weir, Stake Net, nor any Leader, Out-rigger, or other work of any kind whatsoever connected therewith or adjacent thereto, shall be placed, or erected, or suffered to remain in such a manner as that it shall extend to a greater distance than from High water to Low water mark of ordinary Spring Tides, save and except in the case of Ebb and Flood Weirs, commonly called Head Weirs, not fished by means of a fixed Net; nor shall any such Weir be so constructed as to be capable of taking young or unsizeable fish:—and the Nets made use of in the formation and construction of Stake Nets, and of the Leaders of all Bag, or other fixed Nets, shall be extended evenly in such a manner that the Meshes shall be stretched to their full opening; and all Bag Nets shall be so placed and erected as that the Netting of the Leaders can be raised and kept out of water, and that clear openings can be made in all Stake Nets, &c.—Penalty not exceeding Ten Pounds—See also paragraphs "Fixed Nets," "Meshes of Nets," and "Illegal Nets."

For Bye-Laws, see Appendix.

OYSTER FISHERIES.

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102. See Special Book of Instructions on this subject.

NIGHT.

103. If any person shall, between sunset and sunrise, have, or use any Light or Fire of any kind, or any Spear, Gaff, Strokehaul, or other such Instrument, with the intent to take Salmon or other Fish in or on the banks of any Lake or River, or if any person shall be found at any Time chasing, injuring, or disturbing Spawning Fish, or Fish on the Spawning Beds, or attempting to catch Fish in such places (except with Rods and Flies only, within the lawful period) or damming or teeming, or emptying any River or Mill Race, for the purpose of taking or destroying any Salmon or Trout, or Fry thereof, every person so offending in any of the cases aforesaid, shall also forfeit all such Instruments, and shall also forfeit and pay any sum not exceeding Ten Pounds.

Penalty for attempting to take Salmon, Trout, &c., at Night in Inland Rivers, &c., or using Light, &c., for such purposes. 5 & 6 V. c. 106, s. 78.

104. No person shall use any Net except a Landing Net, for the capture of Salmon or Trout in the Fresh Water portion of any River, as defined by the Commissioners, between the Hours of Eight o'clock in the Evening and Six o'clock in the Morning, except so far as the same may have heretofore been used within the limits of a Several Fishery, next above the Tidal Flow, and held under Grant or Charter, or by immemorial usage.—Penalty not exceeding Ten Pounds and Forfeiture of all Boats, Nets, and Gear.

Nets during certain hours in Rivers Prohibited. 26 & 27 V. c. 114, s. 24.

See also "Private Waters."

PENALTIES—APPLICATION OF.

105. One-third of every sum of money levied as a fine, penalty, or forfeiture, shall be paid to the person who shall be the means of bringing to justice any person committing any offence against any of the Provisions of Acts, and the remainder shall be paid to the Board of Conservators of the District in which the offence was committed, or their authorized officer.

32 & 33 V. c. 92, s. 19.

POISONING RIVERS.

106. Any person found on the Bank of or near any River, with any deleterious Matter in his possession, under such circumstances as shall satisfy the Court before whom he may be tried that such person had employed, or was about to employ, such deleterious matter for the capture or destruction of Fish, the said Court is empowered to inflict on such person a penalty not less than Five Pounds, nor more than Ten Pounds; and any person found taking fish from any River or Lake where it shall be proved to the satisfaction of any Justice that such Fish has been wilfully poisoned, shall be subject to a penalty of not less than Ten Shillings nor more than Five Pounds.

Poisoning Rivers for purpose of taking Fish. 13 & 14 V. c. 88, s. 36.

POISONOUS MATTER.

107. No person shall throw, empty, or cause to run or flow into any River or Lake, any Dye-stuff or other deleterious or poisonous Liquid, or shall throw into such River or Lake any Lime, Spurge, or other deleterious or poisonous matter, or shall steep in such River or Lake any Flax or Hemp; and if any person shall so offend, he shall forfeit and pay for every such offence any sum not exceeding Ten Pounds: Provided always, that nothing in Act contained shall extend or be construed to render any person liable to the Penalties hereby imposed for casting into any River or Stream any Dye-stuffs or other Materials which are not of a deleterious Nature, or which are not in a state poisonous to Fish or other Animals using the Waters thereof.

Allowing poisonous matter to flow into Inland Rivers. 5 & 6 V. c. 106, s. 80.

POLLEN.

108. Close Season for Pollen by Trammel Nets in Lough Neagh, 29th September and 1st March.

8 & 9 V. c. 108, s. 26.

Bye-Law made by Commissioners PROHIBITING DRAFT NETS for Pollen in Lough Neagh.

PRIVATE WATERS.

109. Unlawfully and wilfully taking or destroying any fish in any water running through, or being in any land adjoining or belonging to the Dwelling-house of any person being the Owner of such water, or having a right of Fishing therein, a misdemeanour; and doing so in any water, not being such as before-mentioned, but which shall be private property, in which there shall be any private right of Fishing, penalty of Five Pounds over value of Fish taken.

Fishing in Private Waters. 24 & 25 V. c. 96, sec. 24.

110. Nothing to extend to any person angling between the beginning of the last hour before sunrise and expiration of first hour after sunset; but any person angling between the hours mentioned in any such water as first mentioned, liable to penalty of Five Pounds; and in any such water as last mentioned, liable to penalty of Two Pounds.

111. If any person found Fishing against provisions of this Act, the Owner of ground, water or Fishery, his servant, or any person authorized by him, may demand from Offender any Rod, Line, Hook, Net, or other Implement then in his possession, and if not immediately delivered up, he may seize and take the same for the use of such owner.

Engine may be seized. 24 & 25 V. c. 96, s. 25.

112. Any person angling against the provisions of this Act between the hours mentioned, from whom any Implement used by Anglers shall be taken, or by whom it shall be delivered up, exempted from any Damages or Penalty for such Angling.

24 & 25 V. c. 96, s. 25.

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Fishing in
Several Fishery
without per-
mission in
writing.
5 & 6 V. c.
106, s. 66.
11 & 12 V. c.
92, s. 41.

113. No person shall lay, draw, make use of, or fish with any Nets within the limits of any Several Fishery, without a Licence in writing from the Owner or Renter of such Fishery—Penalty, forfeiture of Net, and any sum not exceeding Ten Pounds.

114. Entering in or upon a Several Fishery, for the purpose or under the pretence of killing Fish therein, or taking Fish therefrom—Penalty not less than Ten Shillings nor more than Five Pounds. See also "Inland Rivers."

REGISTRY OF FISHING VESSELS.

115. REGULATIONS for the LETTERING, NUMBERING, and REGISTERING of BRITISH SEA-FISHING BOATS under PART II. of the SEA FISHERIES ACT, 1868 (31 & 32 Victoria, Chapter 45.)

[NOTE.—The Regulations approved by Her Majesty in Council on the 4th day of February, 1869, are REVOKED by the Order in Council of the 18th day of June, 1869, and the following Regulations are now in force].

1. The following Regulations shall be in future observed by owners and masters of all British boats or vessels hailing from, or belonging to any port or place in the United Kingdom, the islands of Guernsey, Jersey, Alderney, Sark, or Man, of whatever size, and however propelled or navigated, which find any portion of their ordinary employment in sea fishing, or oyster or mussel dredging, for purposes of sale; subject, however, to the following qualifications:—

(1). Yachts, vessels, or boats not usually employed in fishing or dredging for purposes of sale shall not be subject to the following Regulations when they are not so employed:

(2). If a boat or vessel employed in fishing or dredging for purposes of sale is also used as a pilot boat, and is marked and numbered as such, under any laws or regulations governing such pilot boat, such boat or vessel shall not be subject to the following Regulations:

(3). Boats employed in the pilchard seyn fishery on the coasts of Cornwall shall, if otherwise duly marked to the satisfaction of the officers of Customs or Coast Guard, be exempt from the necessity of having letters and numbers painted on their sails, bows, or sterns, as required by the following Regulations.

2. Every sea fishing vessel or boat, whether registered under any other Act or not, shall, except as hereinbefore provided for, be lettered, numbered, and have a certificate of registry, and shall for that purpose be entered or registered in a Register of Sea Fishing Boats to be kept at the principal office of Customs in each collectorship. Application, as hereafter prescribed, for letters, numbers, and certificates of Registry shall be made by all owners of fishing boats to the Officer of Coast Guard or Fishery Officer in charge of the Station at or near the place where the boat may for the time being be employed. In any case where a boat belongs to a place situated at a distance from a Coast Guard Station, such application may be delivered to the principal Officer of Customs or to any Fishery Officer at the creek or station at or nearest to the place to which the boat belongs, or at which she may be temporarily employed in fishing. And such application upon being received by any such Officer, shall be forthwith forwarded to the Collector of Customs of the Port in which the place to which the boat belongs is situated, who, upon the receipt of such application, shall cause the boat to be registered and numbered, and grant the certificate of such registry, and forward the same to the Officer through whom the application was received, who is to deliver such certificate to the applicant.

3. The port or place at which any British vessel or boat is registered under the provisions of "The Merchant Shipping Act, 1854" (17 & 18 Vict., c. 104), shall be considered the port or place to which she belongs.

4. In Scotland the Officers of the Board of British White Herring Fishery shall assist the Officers of Customs and of Coast Guard in the performance of the duties imposed by these Regulations; and shall in places where there are no Coast Guard, themselves discharge the duties hereby imposed upon the Coast Guard.

5. If, in the opinion of the Collector of the Port to which any boats belong, or of the Inspecting Commander, or Divisional Officer of the District, it is desirable from local circumstances or otherwise, that the mode of application prescribed in the second article of these Regulations should be partially modified or altered, such Collector, Inspecting Commander, or Divisional Officer shall make a special report to the Board of Trade, setting forth the reasons for and particulars of such modification or alteration.

6. There shall be series of numbers and distinguishing letters for the boats belonging to each collectorship of customs.

7. For purposes of numbering, lettering, and registration, boats shall be divided into three classes, as follows:—

1st Class—Boats of 15 tons burthen and upwards.

2nd Class—Boats of less than 15 tons burthen, navigated otherwise than by oars only.

3rd Class—Boats navigated by oars only.

Provided that the officer to whom the application to register is made may, if he think proper, place any small boat occasionally navigated or propelled by sail in the third instead of the second class.

8. For boats of the above classes the positions and dimensions of the letters and numbers shall be as follows:

1st Class—For the hulls, 18 inches in height, and 2½ inches in breadth, and for the sails one-third larger every way.

2nd Class—For the hulls, 10 inches in height, and 1½ inches in breadth, and for the sails, one-third larger in every way.

3rd Class—Three inches at least in height, and half an inch in breadth.

Provided that in boats that have a "bend piece" or "rubbing streak" the letters and numbers shall be as high as the space above the "bend piece" or "rubbing streak" will admit. In boats where the space between the gunwale and water-line is not sufficient in size for the prescribed letters and numbers, the letters and numbers shall be as high as the size of the boats will admit.

9. In boats of the 1st and 3rd class the number will follow, and in those of the 2nd class precede the distinguishing letter or letters.

10. When vessels carry, or have attached to them, small boats as tenders or otherwise, such boats must be marked with the same numbers and letters as the vessels to which they belong. Such numbers and letters may be of the size appropriate to the class to which the boat would belong according to its own size and means of propulsion, but in position and precedence according to the class of the vessel to which the boat is attached.

11. In sailing boats, and boats navigated by the occasional use of sails, the letters and numbers shall be placed on each bow, three or four inches below the gunwale, and on each side of the mainsail, except for lug-sail boats, in which the letters and numbers may be placed on the foresail or mizen instead of the mainsail. For boats of the third class, the letters and numbers shall be placed on the outside of the stern of the boat immediately under the name. On the hulls all letters and numbers shall be painted in white oil colour on a black ground; and on sails, in black oil colour on white or gray sails, and in white oil colour on tanned or black sails. Except in the case of vessels only occasionally engaged in fishing for purposes of sale, hereinafter in the thirteenth article of these Regulations specially provided for, the letters and numbers of sails shall be painted on each side of the cloth forming the substance of the sail, and not upon any cloth or other thing sewn or otherwise attached to it; and shall be placed on each side of the centre cloth or cloths of the mainsail, clear of and immediately above the close reef, and so as to be at all times conspicuous whether the sail be reefed or not.

12. All boats of whatever class shall have their names, and those of the ports to which they belong, painted in white oil colour on a black ground on the outside of the sterns, in letters which shall be at least 3 inches in height and ½ an inch in breadth.

13. In the case of any vessel or boat only occasionally engaged in fishing for purposes of sale, and not usually so employed, the letters and numbers prescribed by these Regulations may be temporarily affixed by pieces of canvas or board attached to the mainsail and bows, but of the same dimensions as those specified in the eighth article of these Regulations.

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TABLE B.

SEA FISHERIES ACT, 1868.—31 & 32 Vict. Cap. 45.

Port of _____

CERTIFICATE OF REGISTRY.

of _____, named _____

of _____

Owner _____

Master _____

Registered No. _____ of _____ Class _____

Signature of }
Registering Officer }

Date _____

TABLE C.

SEA FISHERIES ACT, 1868.—31 & 32 Vict. Cap. 45.

Application to Register a Vessel or Boat.

Port of _____ Letter _____

The _____

Port or place to }
which belonging }

Owner _____

Master _____

Description of vessel or }
boat, how rigged, what }
sails used, &c. }

Mode of fishing _____

Tonnage _____

Length of keel _____

No. of men _____ } usually employed.

No. of boys _____ }

Signature of applicant _____

Residence _____

NOTE.—This Act does not require that Boats engaged exclusively in Salmon Fishing should be registered; but the 81st section of 5 & 6 V. c. 106, further directs that every Boat, Cot, or Curragh, shall have, upon some conspicuous place thereof, the Name of the Owner, or of one of the Owners, where more than one, and of his Place of Residence, painted in clear, legible characters or letters, of not less than Two inches in length. Penalty for non-compliance, Two Pounds.

SEVERAL FISHERY.

Taking Fish
from Several
Fisheries.
11 & 12 V. c.
92, s. 41.

116. If any person or persons not being authorized by the Owner, Lessee, or Occupier of a Several Fishery, shall enter into or upon such Several Fishery for the purpose or under the pretence of killing Fish therein, or taking Fish therefrom, or shall kill Fish therein, or take Fish therefrom, he or they shall, for every such offence forfeit and pay a sum not less than Ten Shillings nor more than Five Pounds, the same to be recoverable in a summary way before a Justice or Justices.—See also "Private Waters;" and 5 & 6 V. c. 106, s. 66, No. 113, which imposes a penalty of Ten Pounds for using Nets in Several Fishery, without leave in writing from Owner or Renter.

Definition of
Several
Fishery.
13 & 14 V. c.
88, s. 1.

117. The words "Several" Fisheries shall mean and include all Fisheries lawfully possessed and enjoyed as such under any Title whatsoever, being a good and valid Title at Law exclusively of the public, by any person or persons whether in Navigable Waters or in Waters not Navigable, and whether the Soil covered by such Waters be vested in such person or persons, or in any other person or persons.—See also "Private Waters."

SPEARS, &c.

Otters, Spears,
&c., prohibited.
13 & 14 V. c.
88, s. 40.

118. It shall not be lawful in any Fresh Water River or Lake at any Season of the year, to use for the purpose of taking Fish, any Otter, Lyster, Spear, Strokehaul, Dree Draw, or Gaff (except when the latter Implement may be used solely as auxiliary to Angling with Rod and Line, or for the purpose of removing Fish from any legal Weir or Box by the Owner or Occupier thereof,) under penalty of not less than Four Pounds nor greater than Ten Pounds.

NOTE.—This does not extend to Eel Spears.

SUMMONS.

How to be
served.
5 & 6 V. c.
106, s. 94.

119. To be served personally, or left at or on board the Vessel, or posted on the known residence of the person for whom intended—For Witnesses, to be served personally.

UNCLEAN FISH.

Penalty for
having, taking,
or offering for
Sale any
unclean or
spoil Fish.
5 & 6 V. c.
106, s. 74.

120. If any person shall at any Time wilfully take, kill, destroy, expose to sale, or have in his possession, any red, black, foul, unclean, or unseasonable Salmon or Trout, such person shall forfeit and pay any sum not exceeding Two Pounds for every such Fish so taken, killed, destroyed, exposed to sale, or in his possession; Provided always, that if any Person shall take or catch any such Fish accidentally, and return the same immediately to the Water without injury, such person shall not be liable to the penalty aforesaid.

Artificial pro-
pagation, &c.
26 & 27 V. c.
114, s. 22.

121. Nothing shall apply to any person who shall Catch, or have in his possession Salmon or Trout for the purpose of Artificial Propagation, or other Scientific purposes.

Export of
Salmon.
26 V. c. 10,
s. 3, and 33 &
34 V. c. 33.

122. No unclean or unseasonable Salmon, and no Salmon caught during the time at which the sale of Salmon is prohibited in the District where it is caught shall be Exported or entered for Exportation from any part of the United Kingdom, to parts beyond Seas.—Penalty, forfeiture of Salmon, and Five Pounds for each Salmon; and the burden of proving that any Salmon entered for Exportation from any part of the United Kingdom to parts beyond Seas between the 3rd September and 30th April following, is not so entered in contravention of Act, shall lie on the person entering same.

VESSELS, BOATS, &c.

Taking or
using Boats
without
permission.
5 & 6 V. c.
106, s. 72.
Fishermen may
use Waste
Shores for
purpose of
Fishing.
5 & 6 V. c.
106, s. 3.

123. Any person removing, taking, using, or employing any Vessel, Boat, Cot, or Barge, without permission of the Owner thereof, liable to penalty of Two Pounds.

WASTE SHORES.

124. Lawful for all Fishermen and Persons employed by them to enter upon all such Beaches, Strands, and Wastes, on or adjoining the Sea-shore or any Estuary, as may be necessary for the purpose of carrying on any Herring or other Sea-fishing, and also to draw up and spread their Nets, and land their Fish upon any such Beach, Strand, or Waste; Provided that they shall not erect any Fixtures or fixed Nets thereon.

125. And lawful for all Watchmen, Directors, and Guiders of Fishermen, and all such Fishermen themselves, and such other Persons as shall necessarily attend the Nets or Fishings, at the times of fishing for Herrings, Pilchards, and other Sea Fish, to enter and go into and upon any Lands, which lie or adjoin near unto any Fishing Place, fit, convenient, and necessary to watch and to draw or carry the Fish on Shore, and there to watch for the said Fish, and to direct and guide the said Fishermen, which shall be upon the Sea and Sea-coasts for the taking of the said Fish; Provided that no Person shall be empowered or authorized to enter in or upon any enclosed Garden, or any tillage Land, with a growing Crop thereon.

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Or for watch-
ing for Fish.
5 & 6 V. c.
106, s. 4.

126. If any Person shall resist or forcibly obstruct any Fisherman or Person employed by him in entering upon and using in the manner and for the purposes aforesaid, the said Beaches, Strands, Wastes, and other Lands, save Gardens and Lands with a growing Crop, he shall for every such Offence pay a Penalty not exceeding Five Pounds.

Penalty for
obstructing
Fishermen in
using such
Shores.
Ib., s. 4.

WATER BAILIFFS.

127. It shall be lawful for the Board of Conservators for each district, to appoint as many Inspectors and Water Bailiffs as may be necessary for the protection of the Fisheries in the District, and for generally enforcing the Fishery Laws within the same.

11 & 12 V. c.
92, s. 19.
Board of
Conservators
empowered to
appoint Water
Bailiffs.

128. Lawful for any person interested in the preservation of the Fish of any river or lake, or for any persons who shall have united themselves into a society for the preservation of said Fisheries, or for the Owner of any Fishery in any river or lake, or the proprietor of any Salmon Fishery on the Sea Coast to appoint Water Bailiffs. No such Bailiff empowered to act until his appointment shall have been approved and confirmed by two or more Justices assembled in Petty Sessions in the District in which the Bailiff is to act. The Warrant under which any such Bailiff acts must bear a Five Shilling Stamp.

Proprietors of
Fisheries may
appoint Water
Bailiffs.
5 & 6 V. c.
106, s. 82.
8 & 9 V. c.
108, s. 13.

129. The appointment of a Water Bailiff under the 11th & 12th Vic. c. 92, by a Board of Conservators, is not subject to Stamp Duty, nor does it require the approval of the Justices at Petty Sessions, as in the case of appointments under the 5th & 6th Vic. c. 106.

11 & 12 V. c.
92, s. 36.

130. Such Inspectors and Water Bailiffs as shall be appointed under the provisions of Act shall have for the enforcement of Acts, the power of Constables, and all the powers and authorities conferred on Water Bailiffs, or officers, or men of the Constabulary force, or Coast Guard, or Navy. See also No. 3.

11 & 12 V. c.
92, s. 34.
Powers of
Inspectors and
Water Bailiffs.

WHITE TROUT.

131. The word "Salmon" shall extend to, and include Grilse, Peale, Sea Trout, Samlets, Par, and all other Fish of the Salmon Kind, and the Spawn and Fry thereof.

Definition of.
13 & 14 V. c.
88, s. 1.

132. "Jenkin" and "Gravelling" are deemed to be "Salmon."

Jenkins, &c.
26 & 27 V. c.
114, s. 19.

NOTE.—The Appendices in this Digest, are not reprinted in this Report, but are substantially the same as appear in the Schedules to Report.

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APPENDIX,
No. 22.

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DIGEST of the ACTS of PARLIAMENT and the BY-LAWS at present in force in Ireland for the REGULATION of the OYSTER FISHERIES, to which is added, a List of the Licences granted for Oyster Beds, and an Abstract of the Law enabling certain persons to form or plant BAIT BEDS; compiled by THOMAS F. BRADY, Inspector of Irish Fisheries.

THE Legislation on the subject of the Oyster Fisheries of Ireland being scattered over so many Acts of Parliament (no less than ELEVEN in number), rendering it difficult, if not almost impossible, for any person not thoroughly conversant with them, to understand the actual laws in force regulating this branch of the Fisheries of the country, has induced me to extract the sections bearing on the subject, from the different Acts, and present them in the form of a Digest. The present work is therefore published for the guidance and information of all persons interested in the subject, and it is hoped may be found useful to Owners of Oyster Beds, persons about to form or plant New Beds or Layings, and the public generally.

T. F. B.

OYSTER FISHERIES.

5 & 6 Vic., c. 106; 7 & 8 Vic., c. 108; 8 & 9 Vic., c. 108; 11 & 12 Vic., c. 92; 14 & 15 Vic., c. 92; 24 & 25 Vic., c. 96; 29 & 30 Vic., c. 88; 29 & 30 Vic., c. 97; 30 Vic., c. 18; and 32 & 33 Vic., c. 92.

1. Persons entitled to Licence to plant Oyster Beds above, or above and below low-watermark.

- a. The owner of any several fishery.
- b. Any person with the consent of such owner.
- c. The owner of the Soil and Bed of any estuary.
- d. Any person with the consent of such owner.
- e. The owner of any land bordering on the Sea, or any estuary.
- f. Any person with the consent of such owner, but the licence shall only continue to be in force for such period as shall be named in such consent.
- g. The occupier of any land bordering on the Sea or any estuary; but such Licence shall only continue and be in force during the continuance in occupation of the person who was in occupation at the time of granting such Licence.
- h. Any person with the consent of the occupier of the land bordering on the Sea, or any estuary; but such Licence shall only continue and be in force during the continuance in occupation of the person who was in occupation at the time of granting such Licence.

2. Persons entitled to plant Oyster Beds exclusively below low-watermark.

- i. Any of the persons named before.
- k. Any person whatever, with the Licence in writing of the Inspectors of Irish Fisheries, save that such Licence cannot be granted within a Several Fishery, or on the soil and bed of any estuary being the private property of some person other than the applicant, without the consent in writing of the owner thereof.

NOTE.—Forms of application for Licences can be obtained at the Office of the Inspectors of Irish Fisheries, Dublin. Every application must be accompanied with a six-inch Ordnance Sheet on which the proposed bed is clearly delineated and marked out.

LICENCES.

3. Inspectors of Irish Fisheries may grant Licences to form or plant Oyster Beds or Layings whether above or below low-watermark.

4. Licences to be in writing under the hands of any two of the Inspectors of Irish Fisheries, and to define by reference to map or otherwise the position and limits of Oyster Bed. Licences may be made subject to such conditions and limitations, and may be perpetual or terminable, as to the Inspectors shall seem proper.

5. No Licence can be granted in any place where the Inspectors shall be of opinion that the public exercise and enjoy *bona fide* a substantially profitable fishing for oysters, nor within the limits of any Oyster Bed or Oyster Fishery, the property of any private person.

6. Licences subject to the approval of the Lord Lieutenant.

7. Previously to granting Licence, notice, stating application and the time and place (not sooner than three weeks from the date of such notice), when and where the Inspectors shall hold a public inquiry in the district, as to the expediency of granting Licence, to be inserted at least three times in some newspaper circulating in the district; and also to be posted at or near the nearest police station.

8. After granting Licence, like notices to be given, and a true copy of every such Licence signed by the Secretary, to be lodged with the Clerk of the Peace of the County within which the Licence shall operate; and a copy certified under the hand of such Clerk of the Peace shall be admitted in evidence in the same manner as if the copy was the original Licence.

Who entitled
to Licence to
plant beds.
32 & 33 Vic.,
c. 92, s. 14.

Inspectors may
grant Licences.
32 & 33 Vic., c.
92, ss. 8, 14, and
20, and 29 & 30
Vic., c. 97, s. 4.
Licences to be
in writing.
29 & 30 Vic.,
c. 97, s. 5.
Where public
rights exist.
29 & 30 Vic.,
c. 97, s. 6.
Licences to be
approved by
Lord Lieut.
32 & 33 Vic.,
c. 92, s. 14.
Notice to be
given previ-
ously to the
granting of
Licence.
29 & 30 Vic.,
c. 97, s. 6.
Notice to be
given of grant-
ing Licence.
29 & 30 Vic.,
97, s. 7.

9. Any person feeling dissatisfied may appeal within one month after the granting of Licence by way of memorial to the Lord Lieutenant in Council, that Licence may be vacated; and notice of such appeal must be given to the Licencee and to the Inspectors. Lord Lieutenant in Council shall adjudicate thereon, and either confirm or vacate such Licence.

10. Licence, if unappealed from, or if confirmed on appeal, shall be binding and conclusive on all persons, including the Queen, and shall operate to vest in Licencee, and heirs, &c., such rights and privileges as shall be given thereby, free from all prior or other rights, titles, estates, or interests.

11. Production of copy of Licence certified under the hand of Clerk of Peace, to be evidence in all Courts that the Licence of which it purports to be a copy was duly granted, and that all matters and things required to be done previously to the granting of Licence had been duly done and performed.

12. Inspectors may alter any Licence heretofore granted, or grant a new Licence in lieu thereof, to Licencee or his representative, so as to give effect to any agreement or undertaking given or entered into by or on behalf of any such Licencee, with any person or body subsequently to the date of such Licence.

13. Any Licence heretofore granted or hereafter to be granted, determinable by a certificate of the Inspectors, certifying that they are not satisfied that the Oyster Bed is properly cultivated; and on such certificate the Licence and all rights or privileges absolutely determined, and all provisions of Acts shall cease to operate in relation to such Licence as an Oyster Fishery.

14. Inspectors may from time to time make such inquiries and examinations with respect to such Oyster Fishery and require from Licencee such information as they may think necessary or proper. Licencee shall afford all facilities for such inquiries and examinations, and give such information accordingly.

15. If within three years from the date of Licence, proper steps have not been taken in the opinion of the Inspectors to form the Oyster Bed, Inspectors may by order in writing under the hands of any two of them revoke Licence, and thereupon all rights and privileges thereunder shall cease and determine.

16. Previously to making such order, Inspectors shall serve notice of their intention upon the person for the time being entitled to the Licence, or in case he cannot be found to cause such notice to be inserted three times at least in some newspaper circulating in the district. Order of revocation not to be made till after the expiration of one month from service of notice or from date of last advertisement, which shall last happen.

LICENCES GRANTED BEFORE PASSING OF ACT 29 & 30 VIC., c. 88 (1866).

17. Same provisions as to revoking Licences heretofore granted by the Commissioners of Public Works in Ireland.

18. A copy of such Licences, certified by Inspectors or their Secretary, evidence of original Licence.

19. And every such Licence deemed effectual to vest in such Licencee, his heirs and assigns, the exclusive right of laying and planting Oysters, and fishing for Oysters in the Oyster Bed authorized by such Licence, free from all prior or other rights, titles, estates, or interests whatsoever.

INJURING OYSTER BEDS.

20. Any person other than the Licencees or their assigns, agents, servants, and workmen, within the limits of any Oyster Bed or Laying, knowingly doing any of the following things:—

Using any implement of fishing, except a Line and Hook or a Net adapted solely for catching floating fish, and so used as not to disturb or injure in any manner any Oyster Bed or Oysters, or the Oyster Fishery.

Dredging for any ballast or other substance except under a lawful authority for improving the navigation:

Depositing any (*stone*, 29 & 30 Vic., c. 97,) ballast, rubbish, or other substance:

Placing any implement, apparatus, or thing (*in the opinion of the Inspectors*, 29 & 30 Vic., c. 88,) prejudicial or likely to be prejudicial to any Oyster Bed or Oysters, or Brood or Spawn thereof, or to the Oyster Fishery, except for a lawful purpose of navigation or anchorage:

Disturbing or injuring in any manner, except as last aforesaid, any Oyster Bed or Oysters, or Brood or Spawn thereof, or the Oyster Fishery:

Interfering with or taking away any of the Oysters from such Bed without the consent of the Licencees or Owners or occupiers of such Bed:

Liable to a penalty not exceeding Two Pounds for first offence—not exceeding Five Pounds for second offence—and not exceeding Ten Pounds for third and every subsequent offence; and also, liable to make full compensation to the Licencees for all damage sustained by them by reason of unlawful act, and in default of payment same may be recovered by the grantees (*Licencees*, 29 & 30 Vic., c. 97,) by proceedings in any Court of competent jurisdiction, whether offender has been prosecuted for or convicted of offence or not. (See also 42–46.)

APPENDIX,
No. 23.

Persons dissatisfied may appeal.
29 & 30 Vic., c. 97, s. 8.
Effect of Licence.
29 & 30 Vic., c. 97, s. 9.
Copy of Licence certified by Clerk of Peace to be evidence.
29 & 30 Vic., c. 97, s. 12.
Power to alter Licences.
29 & 30 Vic., c. 97, s. 15.

Licence determinable on Certificate of Inspectors.
29 & 30 Vic., c. 97, s. 10;
32 & 33 Vic., c. 92, ss. 8 & 20.
Inspectors empowered to make inquiries and examinations.—/b.

Power to revoke Licences in certain cases.
29 & 30 Vic., c. 97, s. 14.

Notices to be served on Licencee previously to making Order of Revocation.—/b.
Orders not to be made till one month after notice.

29 & 30 Vic., c. 88, s. 5.

29 & 30 Vic., c. 88, s. 4.

Effect of such Licences.
29 & 30 Vic., c. 88, s. 1.

Penalties for injuring Oyster Beds. 29 & 30 Vic., c. 88, s. 2, and 29 & 30 Vic., c. 97, s. 13.

APPENDIX,
No. 23.

CLOSE SEASON.

Close Season.
5 & 6 Vic., c.
106, s. 32.

5 & 6 Vic., c.
106, s. 36, and
11 & 12 Vic.,
c. 92, s. 42.

21. The general Close Season for Oysters is between 1st May and 1st September, and unlawful to dredge for, take, catch, or destroy (or have in possession, s. 36) any Oysters or Oyster Brood between those dates, except where the season may have been or may be altered.

Penalty, Forfeiture of Oysters, and any sum not exceeding Five Pounds, and not less than Ten Shillings.

NOTE.—This season has been altered in the following localities, viz.:—In Tralee Bay from 1st April to 1st November; in Carlingford Lough from 1st March to 1st November; in Achill Sound, Clew Bay, and Blacksod Bay, from 1st April to 1st October; but between 1st and 15th April and 20th June and 1st October, Oysters may be taken in Clew Bay from the natural public bed, lying below level of lowest water of spring tides, for purpose of replenishing private Oyster Beds in Clew Bay alone.—(See Appendix A.)

ALTERATION OF CLOSE SEASON.

Inspectors may
alter close sea-
son. 5 & 6 Vic.,
c. 106, s. 33.

Notices and
Meeting pre-
vious to altera-
tion. 7 & 8
Vic., c. 108, s.
4.

Decision to be
published.
5 & 6 Vic., c.
106, s. 34.

Offences
against such
decision. 5 & 6
Vic., c. 106,
s. 34.

Constabulary.
7 & 8 Vic., c.
108, s. 2.

Coast Guard.
5 & 6 Vic., c.
106, s. 86.

Power to
dredge during
part of close
time.
8 & 9 Vic., c.
108, s. 19.

Penalty for
bringing on
shore, &c.
8 & 9 Vic., c.
108, s. 19.
5 & 6 Vic., c.
106, s. 36, and
11 & 12 Vic.,
c. 92, s. 42.

Inspectors may
prohibit Dredge
on board during
Close Season.
8 & 9 Vic., c.
108, s. 20.

Inspectors may
suspend for a
fixed period
Oyster Fishery
in any locality.
7 & 8 Vic., c.
108, s. 5.

May make
By-laws for
improvement
of Oyster
Fisheries.
8 & 9 Vic., c.
108, s. 20.

Publication of
intended
By-laws.
5 & 6 Vic., c.
106, s. 92.

22. Inspectors of Irish Fisheries empowered to alter Close Season.

23. Before alteration of Season, a meeting of the persons possessed of or interested in such Fishery to be called. Notice of the day and place for such meeting to be given, not less than 14 days from the date of such notice by handbills and advertisement, twice at least, in some newspaper published and circulating in the county or several counties, within which, or on the coast whereof, such Fishery is in whole or part situated.

24. Decision to be published in *Dublin Gazette*, and in some one newspaper circulating in the county or each of the counties within which such Fishery is in whole or part situated; and a copy lodged in the offices of the Clerks of Peace and Petty Sessions; and such other publicity by posting of handbills or otherwise as shall seem fit.

25. For the purpose of convicting any person offending against such decision, a copy of the *Gazette* containing such decision, or an attested copy of such decision, obtained from the office of the Clerk of the Peace (who is required to furnish same on payment of a sum not exceeding two pence for every seventy-two words) conclusive evidence of the existence of such decision and of the due publication thereof.

26. Constabulary empowered to enforce the regulations for the observance of the Close Season.

27. Coast-guard empowered to enforce provisions of Act, or any Order, Regulation, or By-law.

28. Inspectors empowered to permit for or in any district or place, the dredging for Oysters from any natural public Bed, lying below the level of the lowest water of Spring Tides, during such part of the Close Season as they may think fit to appoint, for the purpose of replenishing and supplying artificial Oyster Beds or Layings, or other Beds and Layings the exclusive property of any person, but for no other purpose whatsoever.

29. If any Oysters so taken in the Close Season brought to shore, or sold or offered for sale, or found in the possession of any person on land, or used for any other purpose than the replenishing or supplying any such artificial or other Bed, the person offending shall forfeit such Oysters, and be liable to penalty not exceeding Five Pounds, and not less than Ten Shillings.

30. Inspectors empowered to prohibit, during any part of the Close Season, that any Boat shall have on board a Dredge or other implement for taking Oysters.

BY-LAWS, &c.

31. Inspectors empowered, upon the application of any person interested in any Oyster Fishery in any particular locality, to decide upon, fix, and appoint a period, not exceeding Three Years, within which it shall not be lawful to dredge for, take, catch, or destroy any Oyster or Oyster Brood in such locality. Before any such Order made, meeting to be called as in the case of altering Close Season (see No. 23), and decision published as directed (see No. 24).

32. Inspectors empowered to make By-laws, Rules, and Regulations, as to them shall seem expedient, to prevent the destruction or removal from the Natural Beds of small unsizeable Oysters, and to fix the size or dimensions of the smallest Oysters which may be removed; and to appoint such means to be adopted in dredging and culling Oysters on the fishing grounds as will secure the return to the sea of all Oysters of less dimensions than those to be so fixed; and during any part of the Close Season, or in places where dredging for Oysters shall be prohibited, to prohibit that any Boat shall have on board a Dredge or other implements for taking Oysters; and to make such other Rules and Regulations as they think fit for the increase, improvement, and protection of the Oyster Fisheries.

33. Copies of such By-laws to be lodged with Clerks of Peace and Petty Sessions, and notice thereof posted at the usual places for posting notices in each Petty Sessions District at least One Month before same laid before Lord Lieutenant in Council for approval.

34. Any person aggrieved may appeal against same to Lord Lieutenant in Council.

35. When approved by Lord Lieutenant in Council, to be lodged with Clerks of Peace and Petty Sessions, and with Coast-guard Officers, and in such places as to the Inspectors shall seem fit. Printed copies to be provided and sold at a price not exceeding One Shilling for each copy; and notice of publication and place where same may be purchased to be given for Three Months subsequent to publication in such of the Metropolitan and Provincial Papers as Inspectors shall appoint.

36. Printed copy of By-law, &c., obtained from Clerk of Peace or Petty or Quarter Sessions, and certified to be a true copy, evidence of existence of By-law, and of the due publication thereof.

37. Inspectors of Irish Fisheries may from time to time lay before Her Majesty in Council By-laws for restricting or regulating dredging for Oysters on any Oyster Beds or Banks within twenty miles, measured from a straight line drawn from the eastern point of Lambay Island to Carnsore Point. And all such By-laws shall apply equally to all Boats and persons on whom they may be binding. Her Majesty may, by Order in Council, (a) direct such By-laws to be observed; (b) impose penalties not exceeding Twenty Pounds for breach of any such By-law; (c) apply to the breach of such By-laws, such (if any) of the enactments in force respecting the breach of the Regulations respecting Irish Oyster Fisheries within the exclusive Fishery Limits of the British Islands, and with such modifications and alterations as may be found desirable; (d) revoke or alter any Order so made.

The Close Time by any such Order not to be shorter than that prescribed for the time being by the Inspectors of Irish Fisheries, in respect of Beds within the exclusive Fishery Limits of the British Islands.

Every such Order binding on all British Sea Fishing Boats, and on any other Sea Fishing Boats in that behalf specified in the Order, and on the Crews of such Boats.

WATER BAILIFFS.

38. Proprietor or Tenant of any Oyster Bed or Laying, or any associated body of persons interested in the protection and improvement of any Oyster Fishery, may appoint Water Bailiffs for protection of Fishery, and for enforcement of provisions of Act, and of any By-laws, Rules, and Regulations.

39. Water Bailiffs so appointed may exercise and use all the powers and authorities of a Constable, so far as the same may be necessary. (*For powers of Water Bailiffs—see also 5 & 6 Vic., c. 106, s. 84, and impeding or obstructing, ib. s. 90.*)

40. Appointment must be approved and confirmed by two or more Justices in Petty Sessions in the district within which Bailiff is to act, and Justices shall endorse the Warrant, and may revoke appointment and dismiss such Bailiff, and approve and confirm appointment of some other person.

41. Warrant subject to Stamp Duty of Five Shillings. (*For form of Warrant—see Appendix B.*)

GENERAL PROVISIONS.

42. Any person stealing any Oysters or Oyster Brood from any Oyster Bed, Laying, or Fishery, the property of any other person, and sufficiently marked out or known as such, guilty of Felony, and liable to be punished as in the case of Simple Larceny.

43. Any person unlawfully and wilfully using any Dredge, Net, Instrument, or Engine whatsoever, within the limits of any Oyster Fishery, being the property of any other person, and sufficiently marked out or known as such, for the purpose of taking Oysters or Oyster Brood, although none shall be actually taken, or unlawfully and wilfully, with any Engine dragging upon the ground or soil of such Fishery, guilty of a Misdemeanor, and liable to be imprisoned for a period not exceeding Three Months with hard labour, and with or without solitary confinement.

44. Nothing to prevent any person taking Floating Fish within the limits of any Oyster Fishery with any Net or Engine adapted for taking Floating Fish only.

45. All Oysters being in or on any Oyster Bed, Laying, or Fishery which is the property of any person, and is sufficiently marked out or known as such, shall be the absolute property of such person, and in all Courts of Law and Equity and elsewhere, and for all purposes, civil, criminal, or other, shall be deemed to be in the actual possession of such person.

46. All Oysters removed by any person from any such Oyster Bed, Laying, or Fishery, and not either sold in market overt, or disposed of by or under the authority of the person to whom such Bed, Laying, or Fishery belongs as aforesaid, shall be the absolute property of such last-mentioned person, and in all Courts of Law and Equity and elsewhere, and for all purposes, civil, criminal, or other, the absolute right to the possession thereof shall be deemed to be in such last-mentioned person.

47. If any person found offending, any Officer or person empowered to enforce provisions of Act, or any person interested in the Fishery, may require him to desist from such offence, and also to tell his Christian name and surname and place of abode, and in case of refusal or giving a general description of his abode, so as to be illusory for the purpose of discovery, or continuing offence, lawful for the officer or person so requiring, and any person acting by his order and in his aid, to apprehend such offender and convey him before a Justice of the Peace. Offender not to be detained longer than Twelve Hours. (*See sec. 87 in Act.*)

48. Where any persons, to the number of Three or more together, shall by violence, intimidation, or menace, attempt to impede or obstruct any other person in the lawful prosecution of any Fishery,

APPENDIX, No. 23.

Appeal against.
5 & 6 Vic., c.
106, s. 92.

Publication of.
5 & 6 Vic., c.
106, s. 93.

Evidence of.
5 & 6 Vic., c.
106, s. 93.

81 & 32 Vic.,
c. 45, s. 67.

Proprietors, &c.,
of Oyster Bed
may appoint
Water Bailiffs.
8 & 9 Vic., c.
108, s. 21.

Powers of.
8 & 9 Vic., c.
108, s. 21.

Appointment
of, to be
confirmed by
Justices.
5 & 6 Vic., c.
106, s. 82.

Subject to
Stamp Duty.
8 & 9 Vic., c.
108, s. 13.

Stealing
oysters, felony.
24 & 25 Vic.,
c. 96, s. 26.

Using any
engine within
limits of oyster
fishery.
24 & 25 Vic.,
c. 96, s. 26.

Not to prevent
the taking of
floating fish.
24 & 25 Vic.,
c. 96, s. 26.

Oysters in the
Oyster Grounds
or Fishery to
be Owner's
property.
30 Vic., c. 18,
s. 3.

Oysters re-
moved from
the Fishery
to be Owner's
property.
30 Vic., c. 18,
s. 4.

Offenders may
be apprehended
if they refuse to
tell their names.
5 & 6 Vic., c.
106, s. 87.

Using violence.
5 & 6 Vic., c.
106, s. 88.

APPENDIX,
No. 23.

any Bailiff, Officer of Her Majesty's Navy or Coast-guard, or Peace Officer, and any person acting by their order or in their aid may apprehend such offenders and convey them before a Justice of the Peace. Offenders liable to a penalty of Twenty Pounds and costs, in addition to any other penalty to which they may be liable for any other offence against Act.

How offences
may be tried.
5 & 6 Vic., c.
106, s. 94.

Proceedings
under Petty
Sessions Acts.
29 & 30 Vic.,
c. 97, s. 11.

Evidence of
Informers,
Owners, &c.,
admissible.
5 & 6 Vic., c.
106, s. 104.

Bait beds may
be made.
5 & 6 Vic., c.
106, s. 13.

Interfering
with or taking
away bait from
such.
5 & 6 Vic., c.
106, s. 13.

49. Offences may be tried and adjudged and determined on in a summary way by one or more Justices of the Peace, on the complaint, verbal or otherwise, of any person.

50. Proceedings to be under Petty Sessions and Summary Jurisdiction Acts (1851).

51. Evidence of Informers, Owners, or Occupiers of or persons interested in the Fishery, or any person, though entitled to a proportion of the penalty, admissible.

BAIT BEDS.

53. Inspectors empowered to grant to any Owners or Occupiers of land bordering on the Sea or any estuary, or to any person, with the consent of such Owner or Occupier, Licences for the formation of Bait Beds between high and low water marks, and in all other places adjacent to their respective portions of lands, as shall be suitable for the purpose. Such Beds to be held as private property, and the Licensees to hold exclusive control over them so long as they shall be Owners or Occupiers of such land. Licence to be granted only where no public Banks or Beds at present exist.

54. Any person interfering with or taking away Bait from such Bed after its formation, without consent of Owner or Occupier, liable to a penalty of Five Pounds.

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REPORT

BY THE

COMMISSIONERS FOR THE HERRING FISHERY: SCOTLAND:

OF THEIR PROCEEDINGS

IN THE YEAR ENDED 31ST DECEMBER 1871.

BEING THE FISHING OF 1871.

Presented in pursuance of the Acts 48 Geo. III. c. 110, sect. 7, and 55 Geo. III. c. 94, sect. 4.

THE HERRING FISHERY of 1871 was not quite so great as that of 1870, which was the greatest known upon the coast of Scotland, but it exceeded the Fishery of every other year except 1870.

The Returns for 1871 were—

Barrels.	Barrels.	Barrels.	Barrels.
Cured,...825,475½	Branded,...346,633½	Exported,...551,605½	To Continent,...502,534½

The corresponding Returns for 1870 were—

Barrels.	Barrels.	Barrels.	Barrels.
Cured,...833,160½	Branded,...299,381½	Exported,...530,558	To Continent,...486,064

From these Returns it will be seen that the Fishing of 1870 exceeded the Fishing of 1871 by 7684 barrels only. On the other hand, there was in 1871 an increase over 1870 of 47,252 barrels in the quantity of Herrings branded, and of 21,047 in the quantity exported, the increase in export being almost entirely to the Continent. The Export of the two years was—

YEAR.	To Ireland.	The Continent.	Out of Europe.	TOTAL.
	Barrels.	Barrels.	Barrels.	Barrels.
1871,	46,347	502,534½	2,724	551,605½
1870,	41,524	486,064	2,970	530,558
Increase in 1871,	4,823	16,470½	.....	21,047½
Decrease in 1871, . . . . .	.....	.....	246	.....

From which it appears that there has been—

Increase of 4823 barrels in the Export to Ireland, and Increase of 16,470½ barrels in the Export to the Continent, but a Decrease of 246 barrels in the Export to places out of Europe ; making a total Increase in Export of 21,047½ barrels. To places out of Europe the Export in 1871 shows only 2724 barrels. For a number of years past this Export to places out of Europe has been quite insignificant, and its long continuance now upon so small a scale, considering that at one time it reached nearly 90,000 barrels in the year and averaged about 80,000 barrels a year, is proof that this branch of the trade has collapsed without hope of recovery. In Ireland too, the market has become much more precarious, having fallen from an Export which reached from 150,000 to 190,000 barrels a year, to an Export which does not reach 50,000 barrels in the year. This decline of Export to places out of Europe and to Ireland, of course, gives enhanced value to the markets of the Continent, upon the solidity and extension of which the Cured Herring Trade in Scot-

Approximate Cost of Preparation, Printing, and Paper, £28.

land may be said now entirely to depend. It is therefore peculiarly satisfactory to be able to report the Export to the Continent as rising. In 1871 this Export reached upwards of half a million barrels of Herrings, and was by much the highest ever known, for it exceeded that of 1870 by 16,470 barrels, the Export to the Continent of 1870 having itself been 53,069 barrels higher than the Export of any previous year.

The high standard of the Fishery of 1871 is still more conspicuous if its Returns be compared with an average of the seven preceding years ending 1870. The relative figures are—

YEARS.	Barrels Cured.	Barrels Branded.	Barrels Exported.	Brand Fees Received.
Average of seven years, 1864 to 1870	686,587	250,639	407,804	£4,180 18 10
1871,	825,475½	346,633½	551,605½	5,780 5 10
Increase in 1871, . . .	138,888½	95,994½	143,801½	£1,599 7 0

Taking the Returns for the three consecutive years 1869, 1870, and 1871, they are:—

YEAR.	Barrels Cured.	Barrels Branded.	Barrels Exported.	Brand Fees Received.
1869,	675,143	244,522½	381,333½	£4,077 13 7
1870,	833,160½	299,381½	530,558	4,991 18 9
1871,	825,475½	346,633½	551,605½	5,780 5 10

These Returns, besides showing the increase in the number of barrels branded and in the Export, show the increase in the Brand Fees, which in 1869 amounted to £4077, 13s. 7d. ; in 1870 to £4991, 18s. 9d. ; but in 1871 to £5780, 5s. 10d. The Brand Fees in 1871 were thus £788, 7s. 1d. more than in 1870, and £1702, 12s. 3d. more than in 1869 ; and upon the annual average of the seven years ended 1870, they show an increase of £1599, 7s. The Treasury Commission appointed in 1856 to investigate into the Herring Brand, estimated the cost of Branding at £3280 per annum. Upon this estimate, the Brand Fees have, on the average of the seven years ended 1870, yielded a surplus revenue of £900 per annum, but in 1871 a surplus revenue of £2500.

In the application of the Brand there was introduced in 1871 a more distinctive classification of Herrings Branded with the Crown P. Brand, to the effect of reserving the original Crown P. Brand for the class “Mixed” Herrings, which that Brand had always represented, and instituting a distinguishing Brand for “Spent” Herrings, and a more specific Brand for the Herrings known as “Maties.” This sub-division of classification is regarded, both in this country and upon the Continent, as a decided improvement upon that more general classification which previously subsisted under the Crown P. Brand.

Upon the East Coast, the Districts where in 1871 there was INCREASE upon the Returns of Herrings compared with the Returns of 1870, were, Eyemouth, Leith, Anstruther, Montrose, Fraserburgh, Banff, Buckie, and Wick. Those in which there was DECREASE were, Peterhead, Findhorn, Cromarty, Helmsdale, Lybster, Orkney, and Shetland. The Increase and Decrease in these Districts was :—

EAST COAST.

Increase.

	Barrels Cured.
Eymouth,	15,000
Leith,	1,000
Anstruther,	10,000
Montrose,	26,000
Fraserburgh,	6,500
Banff,	2,000
Buckie,	5,000
Wick,	35,000
	<hr/>
	100,500

	<i>Decrease.</i>	Barrels Cured.
Peterhead,		5,000
Findhorn,		6,800
Cromarty,		3,500
Helmsdale,		2,200
Lybster,		500
Orkney,		7,500
Shetland,		2,500
		<hr/> 28,000

A very heavy glut was experienced at Wick upon the five days ending the 19th of August. Judging from the quantity of Herrings landed in those five days, the shoal must have been enormous; numbers of boats brought in each 60, 70, 80, and 90 crans a day, and even as many as 100 crans were brought in by a single boat. Such great takes could not be effected without considerable loss of netting, nor without creating much difficulty in getting salt and barrels and gutters and packers to cure the fish; in consequence, the quantity of Herrings branded at Wick in 1871 was far less than it would have been had the fishery there been more regular. In Fraserburgh District, the Fishing of 1871 was the largest that has ever been known. The disappearance of dog-fish from this part of the coast has led to the Fishermen using larger drifts of netting than they used to do a few years ago. At that time they carried about 24 nets per boat; now they carry from 40 to 42, nearly double the quantity; the nets are also made of finer twine and are better adapted for catching fish, although they do not stand such rough usage as the old sort of net. About three-fourths of the boats in this District fished as much as 200 crans of Herrings each in the season; several had 300 and some 400 crans. The night of heaviest fishing was the 23d of August, four days after the glut at Wick, which seems to indicate that the shoal was the same as the one which had been met with off the Caithness Coast; at any rate some idea may be formed of the myriads of Herrings which there must have been in the North Sea last season, for the heavy fishing at Fraserburgh took place after the boats off the Wick coast had loaded themselves night after night with Herrings. It is likely that a catch as profuse would have continued off Fraserburgh for some time but for a storm which set in on the afternoon of the 24th of August. In Peterhead District, the Fishing was nearly equal to the Fishing of 1870 which was the most abundant ever known there. Upon that coast Herrings have often been caught at the distant offing of thirty to fifty miles from the land. In 1871 the ground at this distance was again tried but without notable success; afterwards fishing was tried from eight to twenty miles off the land, and much of the year's catch was drawn at that range to the great benefit of the fishermen in the saving of labour and exposure. In Montrose District, the increase was not marked by glut as at Wick; this is in a great measure due to the boats fishing upon parts of the coast which were formerly neglected. Thus eight years ago the Herring Fishery off Aberdeen was very trifling. It only assumed importance in 1870, when about 80 boats fished there and averaged upwards of 160 crans a boat, while the boats at the other stations in the District scarcely exceeded 100 crans. In 1871, 115 boats fished at Aberdeen and made the high average of 195 crans per boat, while the highest average at any of the other stations was 126 crans. At Aberdeen the Fishery is greatly indebted to steam-tugs, which are taken up by the crews of the boats to tow them to the fishing grounds and bring them back into port. In the absence of direct application of steam to fishing boats which, it may be prognosticated, will be introduced before many years have passed, the employment of steam-tugs to the fleet cannot be too much extended. As a resource of modern times it overcomes the hindrances and difficulties of a coast where the tides are rapid and the winds variable and often light; indeed it is impossible too strongly to recommend a force which so easily surmounts these and other obstacles and, by taking the boats long distances, opens new fishing grounds.

Upon the West Coast, the Districts where, in 1871, there was INCREASE in the Returns compared with the Returns of 1870, were Loch Broom, Loch Carron, Fort William, and Campbeltown. Those in which there was DECREASE were Stornoway, Inverary, Rothesay, and Greenock. The Increase and Decrease in these Districts were:—

REPORT BY THE COMMISSIONERS FOR THE

WEST COAST.

<i>Increase.</i>										Barrels Cured.
Loch Broom,	.	.	.	.	.	.	.	.	.	4,000
Loch Carron,	.	.	.	.	.	.	.	.	.	22,000
Fort William,	.	.	.	.	.	.	.	.	.	1,500
Campbeltown,	.	.	.	.	.	.	.	.	.	800
										<hr/> 28,300 <hr/>
<i>Decrease.</i>										Barrels Cured.
Stornoway,	.	.	.	.	.	.	.	.	.	96,500
Inverary,	.	.	.	.	.	.	.	.	.	4,300
Rothsay,	.	.	.	.	.	.	.	.	.	5,500
Greenock,	.	.	.	.	.	.	.	.	.	2,000
										<hr/> 108,300 <hr/>

Upon the West Coast, the great decrease is in Stornoway District, which comprises the extensive Herring Fishery sprung up of late years off the eastern coast of the Island of Barra. Both at Stornoway and off Barra, as well as along the whole coast of the Long Island from Butt of Lewis to Barra Head, the Fishing of 1871 proved very deficient, and at every station complaint was made of want of fish. In consequence, the boats did not flock to the Fishing in such numbers as they had done in previous years, and there were 350 boats fewer fishing in the District in 1871 than in 1870. In Inverary District the Fishing was also unproductive. The Fishermen there had anticipated an abundant season, as at the end of June and beginning of July a fine regular fishing had been got by Drift Nets in every part of Lochfyne. About the 17th of June there were 150 boats using Trawl Nets and only 81 using Drift Nets, but by the end of July there were 364 boats using Drift Nets and only 102 using Trawl Nets. At this period the Drift Net boats were having fair success, but the Trawl boats not; yet while the Fishing was thus chiefly in the hands of Drift Net Fishermen, it fell off quite unexpectedly. Allusion is thus made to the different nets used in Lochfyne by the fishermen, to show that much of that antagonism which formerly prevailed against the Herring Trawl Net has abated, the men now often changing the one net for the other according as they deem the one likely to be more successful than the other; nevertheless, a strong conviction still remains in the minds of many that the Herring Trawl Net breaks up the shoals of fish and destroys the Herring grounds, and there are numbers of fishermen who ascribe the poor Fishing in Lochfyne of 1871 and of other seasons to the use of the Trawl Net.

It is impossible that there should not be rival interests between fishermen of different classes; but those which exist in the Herring Fishery between Drift Net Fishermen and Trawl Net Fishermen are perhaps less embarrassing in the questions to which they give rise, than are the rival interests of Line Fishermen and Beam Trawlers in the Deep-sea Fishing for White Fish; for the use of the Herring Trawl is confined almost exclusively to Lochfyne and its precincts, whereas Line Fishermen and Beam Trawlers occupy more or less most parts of the coast of Great Britain and Ireland. This question of the relative rights of Line Fishermen and of Trawlers was brought prominently before the Sea Fisheries Commission of 1863; it was one upon which they collected a vast deal of evidence which they analysed with the greatest care and attention, and they came to the conclusion that interference by legislation would be neither just nor expedient. The following extracts from their Report show their reasons for arriving at this conclusion, and are quoted here because they not only summarise the case on each side, but apply generally to all restrictive legislation upon Sea Fisheries.

The Commission state:—

“The trawlers in bays and loughs, as elsewhere, take, as a rule, fish of a class seldom caught by the line fishermen. Even if it were true, then, that some damage is done to the line fishermen by trawlers (of which we are not satisfied), it would in our opinion be unwise to interfere with trawling, unless it can be clearly shown that the line fishermen alone would supply the market with a greater quantity of their own fish than the trawlers and line fishermen together of all kinds of fish. To such allegations as that trawling frightens away the shoals of herrings and sprats, and even hake, we attribute very little importance. Experience of other places, particularly the east coast of England, where so much trawling takes place, often in close proximity to the herring fishery, without driving the herrings from the coast, shows that there is no ground for such assertions.

“We believe that in Ireland, as on the west coast of Scotland, where there are numerous deep bays, migratory fish, such as herrings and sprats, are very uncertain; they will, for years, make their appearance in particular bays, and then, for no apparent reason, leave them, returning again

“after an interval. The appearance in the bays of larger fish, such as cod, ling, and hake, depends in turn upon that of the shoals of herrings and sprats upon which they prey.”

* * * * *

“Thus it appears:—

“(a.) That fishermen of different classes may, and do to a considerable extent, interfere with one another.

“(b.) How far the intervention of the State is needed, however, in order to see justice done and to keep the peace, is a very difficult matter to decide. The prohibition of one method of fishing, on account of its interference with another, could only be justified on the ground, that the latter method yielded a far more valuable supply of fish to the community than the former, which is not shown to be the case in any of the complaints which have come before us.

“In reviewing generally these complaints of one class of fishermen against another, we have assumed that, *prima facie*, one class of fishermen have as much right to use the sea for the purposes of their trade as any other. No one has any vested right, or exclusive interest, justifying him in so occupying the sea as to prevent others from fishing in his vicinity. For example, if a line fisherman shoots a line of three miles, he has no right to say that no trawler shall work near it, so as to run the chance of working over it, or destroying it; he lays his line at his own risk, with the knowledge of the danger, and subject only to a remedy at law, if it can be shown that the trawler wilfully, or negligently, damaged it.

“If it should be clearly shown that a given mode of fishing is by far the most profitable, but is impeded, or prevented, in consequence of another and less profitable mode of fishing being carried on over the same ground, there would arise a case for legislation. But if two or more modes of fishing are carried on at the same time, subject to certain unavoidable losses arising from their mutual interference, unless it be clear that a larger supply of fish would be acquired by restricting the use of one of them, it is the interest of the public that no such restriction should be made.

“It has not been proved to our satisfaction that to prohibit, even partially, any of the modes of fishing complained of would result in a greater take of fish of all sorts in other ways. We are therefore of opinion that even granting a certain loss to drift, line, trammel, and other fishermen, it would not be advisable to make such prohibitions, even for certain times or in certain limited places.”

The anxiety prevailing in the Trade lest the “Factories and Workshops Act” should be made a bar to the proper curing of Fish, referred to in the Board’s Report of 1870, was allayed by the introduction by Her Majesty’s Government, at the instance of Memorials from the Trade supported by Members of Parliament and the Board, of an Amending Act, viz., the 34th and 35th Vict. cap. 104, which enacts, sect. 4, that, “Whereas upon the arrival of Boats with Fish, it is necessary, for the purpose of preventing such Fish from being spoiled, to employ persons in gutting, salting, and packing such Fish upon the arrival of such Boats: be it enacted, nothing in the Factory Acts, 1833 to 1871, or in the Workshop Acts, 1867 to 1871, shall extend to the process of gutting, salting, and packing Fish immediately upon its arrival in the Fishing Boats;” an Enactment which accomplishes all that was desired.

In the Cod and Ling Fishery there was an increase upon that branch of the fishery which is carried on by open boats, of 9322 cwts. cured dried. For most of the Districts the Returns from open boats show an increase in 1871 over 1870, but the deep-sea fishing by vessels was not so good, and the vessels fitted out from Shetland for the Faroe Islands had so little success, that their catch was less than one-third of their catch of 1870. This failure in the fishing by vessels reduces the Gross Returns of the Cod and Ling Fishery, and makes the Total for the year 1871 less than the Total of the year 1870 by 26,258 cwts. cured dried and 662 barrels cured in pickle.

The Statistical Returns of the Fisheries under charge of the Board, show that there was an increase in 1871 over 1870 of 378 Boats, 834 Fishermen, 50 Fishcurers, 47 Coopers, and 650 other persons; also that in the Tonnage employed there was an increase of 12,516 tons, of which 7776 tons were British and 4740 tons Foreign.

From a Return upon estimate as carefully as could be made, the total value of the produce of the Sea Fisheries of Scotland, *exclusive of Salmon*, amounts at present to £1,500,000 per annum, thus divided among the several Fisheries, viz.:—

Fish, viz.:—

Herrings,	£960,485	0	0
Sprats,	7,022	0	0
Cod, Ling, etc.,	206,201	0	0
Haddock, Whiting, etc.,	264,595	0	0

Flat Fish, viz.:—

Turbot, Halibut, Skate, Flounder, etc.,	12,280	0	0
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Shell Fish, viz.:—

Oysters,	14,100	0	0
Lobsters, Crab, etc.,	32,269	0	0
Mussels, Wilks, etc.,	8,479	0	0

TOTAL,	£1,505,431	0	0
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The Sea Fisheries Act, 1868, is becoming much better established. Among its great and acknowledged benefits are its provisions for Mussel Beds, by which that valuable bait for the white fisheries is preserved and is being increased, when previously the beds of mussels were, from want of regulation, threatened with extinction. Upon the coasts of Scotland, the business of the Act is coming more and more into the hands of the officers of the Fishery Board. Under the Regulations of the Act the owner of a fishing boat is required to submit his Certificate of Registry for examination every year, either at the Head Office in each Collectorship of Customs, or at the station through which it was originally obtained, and the Certificate, upon being examined and found correct, has to be indorsed by the examining officer. In 1870, the Applications to Register received by the Board's officers were 606; in 1871, 706; in 1870 the number of Registers issued by them was 576; in 1871, 748; in 1870 the number of fishing boats' Registers examined and indorsed by the officers of the Fishery Board was 3542; in 1871, 4995. These figures show an increase in 1871 over 1870

of 100 Applications to Register,
 „ 172 Registers Issued,
 and
 „ 1453 Registers Examined and Indorsed.

Besides these direct operations, the influence of the officers has been most usefully employed in explaining the provisions of the Act to the fishermen, and in encouraging them to observe it. Upon the coasts of the Hebrides and other Islands of Scotland, and upon the very similar coasts of most of the western and northern portions of its mainland, in fact over the larger part of the coast line of Scotland, the Act, being of recent origin, has not yet been able to be carried out in such a way as to secure its regular and complete observance by all owners of fishing boats; indeed many still evade it, but through the exertions of the officers a visible improvement is taking place every year and, in addition to more complete Registry, the boats are being better Lettered and Numbered. In the enforcement of the Act, during 1871, 278 boats were detained by the Board's Officers and 161 by the Cruisers working with the Board. These detentions, most of them for only a few hours, proved sufficient not only to carry out the enforcement of the Act in the cases of the detained boats, but to extend its observance through the fleets amongst which those boats were assembled, without the necessity, except in one case of contumacy, of imposing Fine in terms of the Act. A large number of fishing boats were also boarded and warned to carry lights at night, and with a view to encourage them in being ready with proper lights a lantern of simple construction, ingeniously adapted to the purpose, was shipped in the Board's Cruiser "Vigilant" and taken round the Coasts where, being brought under the special notice of the crews of fishing boats, several supplied themselves with it at once. A handy and suitable lantern for boats is a real acquisition, but as the carrying of lanterns is, from want of room and secure stowage, much more difficult and troublesome in boats than in ships, this has led, on the part of fishermen, to great neglect of showing lights, and has created a prejudice against lights which is fostered by other objections, some fanciful but some also not without ground. The enforcement of the regulations for lights is therefore not easy, and the regulations themselves are neither so simple nor so capable of direct application as are the other provisions of the Act. Still, some progress has been made in getting the regulations for lights better observed.

The vessels employed in 1871 in keeping the coast were H.M.S.V. "Jackal," Lieut.-Commander Horace W. Rochfort; and the "Vigilant," Fishery Cruiser, Samuel M'Donald, Esq.; also the Gun-boats from H.M.S. "Repulse," Queensferry, viz., the "Erne," Lieut. William G. Scott, and "Netley," Lieut. Henry Ommaney; and the Gun-boat "Rainbow," Lieut. W. L. Martin, from H.M.S. "Invincible," Hull. Their services were much appreciated. The employment of the Gun-boats from the Guardships "Repulse" and "Invincible" was only during the pressure of the great summer Herring Fishery and confined to the east coast of Scotland and coast of Northumberland; but the service of the "Jackal" was both upon the east and west coast of Scotland and was continuous, and the Board found in Lieut. Rochfort a naval Superintendent who proved himself most able and energetic in carrying out the Regulations and in supplying protection and assistance to the fishermen at sea. The "Vigilant" too was extensively employed in the like service on both coasts, and her commander, Mr. M'Donald rendered, as he has always done, efficient service upon every station he occupied. In connexion with the Board's general duty over the fishing boats, there were recovered off Wick in 1871, 337 Nets, 933 Buoys, and 41 other articles, of which, through the agency of the Fishery Board and its Officers, owners were traced and their property restored to enable them to carry on the season's fishing, in the case of 335 Nets, 793 Buoys, and 40 other articles; owners being thus found for all the Nets but two, and all the articles but one, as also for a very large proportion of the Buoys. Much of

this recovery of valuable fishing property is due to the presence and watchfulness of the crew of the Superintending boat put upon Wick station by the Board during the Fishery. The temporary employment of boats' crews in superintendence under a Fishery Officer is found most useful, and has the advantage of being an inexpensive form of Fishery Police; thus in Loch Hourn an abundant Herring fishing having set in during autumn, when the nights had begun to get dark, the crowd of boats in these narrow waters and the number of fishermen collected together, created symptoms of brawls and breaches of the peace, which however were at once averted and the fishing peaceably conducted to its end, by placing over it a superintending crew under the Fishery Officer of the District. In all branches of their duty the services of the Fishery Officers, and of the General Inspector and Assistant Inspector who are at the head of this branch of the outdoor establishment, have been given with exemplary diligence, fidelity and intelligence.

The Meteorological Department, London, have continued to evince their interest in the welfare of fishermen by a liberal issue to fishing stations of a very improved edition of "The Barometer Manual," compiled by direction of the Meteorological Committee by Mr. Robert H. Scott, F.R.S., Director of the Meteorological Office, and brought out in 1871. This Manual is admirably arranged and full of valuable information clearly and simply set forth, not only upon the Barometer, but upon other Meteorological instruments. To the Barometers which the Department have supplied to the coasts of Scotland they added, in 1871, one to Kirkwall, which was set up by the "Vigilant," and is likely to be of great use to the numerous small boats from surrounding places constantly passing to and from Kirkwall, the capital of the Orkney Islands.

In their Report for 1870 the Commissioners stated "that the difficulties which had been experienced in the erection of Anstruther Union Harbour had compelled the Board to submit its condition to the Lords Commissioners of Her Majesty's Treasury as a matter for special consideration, the ordinary Pier and Quay Grant not being sufficient to carry the works to completion after the casualties which had been experienced." The Treasury in consequence commissioned Mr. John Hawkshaw, the eminent Engineer, to examine and report upon the works. Mr. Hawkshaw accordingly made an inspection of the whole of the Works, and rendered his Report to the Treasury on the 22d of June 1871, which entered, as he was required to do, into the difficulties that had been experienced in the course of construction and into the pecuniary and other embarrassments which had arisen. Mr. Hawkshaw stated his opinion that it is quite practicable to make a safe and convenient tidal harbour at Anstruther at a cost commensurate with the benefit which it would confer upon the trade, and that the works are well designed for the object in view. He estimated the cost of completing them at £18,000; and, with respect to the critical position of the East Pier, he urged the saving of it immediately by depositing large blocks of concrete or rubble masonry, made with Portland cement, in front of the damaged portion; a mode of procedure in which Messrs. Stevenson, C.E., the Engineers of the Board, concurred: the cost of this he estimated at £6000. The Treasury declined to apply to Parliament for funds to complete the works but resolved to move for a sufficient sum to save the East Pier; and there being outstanding claims unsettled to the amount of £4000, which with the £6000 for the concrete blocks made together a sum of £10,000, the Treasury obtained a vote of Parliament for £7000, taking the Board's Pier and Quay Grant of £3000 for the year 1871 to make up the remainder. The £10,000 required having been so raised, the deposit of concrete blocks proceeded under charge of Messrs. Stevenson, and, although begun very late in the year with all the disadvantage of autumn and winter nights, has been successfully carried on, and as the work advanced was found to accomplish the object in view.

The Report of the Engineers, and the Accounts of the year's Expenditure of the Pier and Quay Grant, will be found in the Appendix, along with the Returns and Statistics of the Fisheries for the year, in the following order:—

HERRING FISHERY.

- No. 1.—Account of Vessels fitted out in Scotland for the Herring Fishery, with the Herrings Salted or Cured on board;
- No. 2.—Account of Herrings Cured or Salted on Shore in Scotland;
- No. 3.—Account of the Total Quantity of Herrings Cured in Scotland;
- No. 4.—Account of the Total Quantity of Herrings in Scotland Branded, with the amount of Fees collected thereon;
- No. 5.—Account of the Export of Herrings from Scotland; with a Supplementary Note showing, for the Export to the Continent, the Ports to which the Herrings have been Shipped;
- No. 6.—Account of the Number of Cran Measures in Scotland adjusted and Branded;
- Abstract of the Total Quantity of White Herrings Cured, Branded, and Exported, from 1st June 1809 to 31st December 1871, showing also the Countries to which they have been Exported.

8 REPORT BY THE COMMISSIONERS FOR THE HERRING FISHERY.

COD AND LING FISHERY.

- No. 1.—Account of Vessels fitted out in Scotland for the Cod and Ling Fishery, with the quantity of Cod, Ling, and Hake they Cured ;
- No. 2.—Account of Cod, Ling, and Hake, taken by Open Boats at the Cod and Ling Fishery in Scotland, and Cured ;
- No. 3.—Account of the Total Quantity of Cod, Ling, and Hake taken both by Vessels and Open Boats at the Cod and Ling Fishery in Scotland, and Cured ;
- No. 4.—Account of the Export of Cod, Ling, and Hake from Scotland ;
- Abstract of the Total Quantity of Cod, Ling, and Hake Cured and Exported, from 10th October 1820 to 31st December 1871.

FISHERY STATISTICS.

- No. 1.—Account of Boats, Men, &c., employed at the Herring Fishery in Scotland, in one selected week for each District ;
- No. 2.—Account of Boats, Fishermen, &c., with the estimated Value of Boats, Nets, and Lines employed in the Herring and Cod and Ling Fisheries of Scotland ;
- No. 3.—Account of the Tonnage of Shipping, and Number of Seamen employed in the Herring and Cod and Ling Fisheries of Scotland ;
- No. 4.—Abstract of Tonnage of Vessels and Boats, and of the Number of Seamen, Fishermen, and Persons employed in the Herring and Cod and Ling Fisheries of Scotland.

Report by the Engineers of the State of the Harbour Works in charge of the Fishery Board : Scotland.

General Account of the Expenditure on Harbours, Piers, or Quays.

Abstract showing the Expenditure on each Work.

SUMMARY.

Upon comparing the Accounts of 1871 with those of 1870, it will be seen,—That in the Herring Fishery the total quantity of Herrings cured in 1871 was 825,475 $\frac{3}{4}$ Barrels ; the total quantity branded, 346,633 $\frac{1}{2}$ Barrels ; and the total quantity exported 551,605 $\frac{1}{4}$ Barrels ; being a decrease of 7684 $\frac{3}{4}$ Barrels in the quantity cured, but an increase of 47,252 Barrels in the quantity branded ; and of 21,047 $\frac{1}{4}$ Barrels in the quantity exported.

That in the Cod and Ling Fishery 119,030 cwts. were cured dried, and 9283 Barrels cured in pickle ; and that the quantity exported was 54,171 $\frac{1}{4}$ cwts. cured dried ; being a decrease of 26,258 $\frac{3}{4}$ cwts. in the quantity cured dried, and of 662 Barrels in the quantity cured in pickle, and a decrease of 2229 $\frac{1}{4}$ cwts. in the quantity exported.

That the number of Fishing-Boats in Scotland was 15,313, and of Fishermen and Boys 46,546 ; and that the estimated value of the Boats, Nets, and Lines employed in the Herring and Cod and Ling Fisheries was £984,680, being an increase of 378 Boats, and of 834 Fishermen ; and an increase of £30,866 in the estimated value of Boats, Nets, and Lines.

CAITHNESS.

JAMES T. GIBSON-CRAIG.

ELCHO.

JAMES MATHESON.

GEORGE LOCH.

JOHN INGLIS.

LYON PLAYFAIR.

ANDREW COVENTRY.

CHARLES BAILLIE.

ALEX. S. FINLAY.

GEORGE J. ALLMAN.

CHARLES F. MAXWELL.

GEORGE YOUNG.

ANDREW RUTHERFURD CLARK.

Fishery Board : Scotland :
Edinburgh, 1st June 1872. }

A P P E N D I X.

APPENDIX.

No. I.

ACCOUNT of the Number of VESSELS fitted out in SCOTLAND for the HERRING FISHERY, in the Year ended 31st December 1871; the Districts from which fitted out; the Tonnage and Number of Men; the Netting, Salt, and Barrels Shipped; and the Barrels of Herrings Cured.

DISTRICTS.	Vessels.	Tonnage.	Men.	Netting.	Salt.	Barrels.	Herrings Cured				Total Cured in Vessels.
							Gutted.		Ungutted.		
							Gutted and Packed within 24 hours after being caught.	Gutted and not within 24 hours after being caught.	Barrels.	Barrels of Bulk.	
	Number.	Tons.	Number.	Square Yds.	Bushels.	Number.	Barrels.	Barrels.	Number.	Number.	Barrels.
Stornoway, .	20	1,765	165	7,200	27,459	1,905	818	...	...	11,910	12,728
Loch Broom, .	2	36	9	13,800	610	175	53	...	...	43 $\frac{1}{4}$	96 $\frac{1}{2}$
Loch Carron and Skye, .	44	1,015	160	279,000	18,757	9,333	3,524 $\frac{1}{2}$	...	573	243	4,340 $\frac{1}{2}$
Fort William, .	6	76	22	34,000	930	412	801	...	...	...	801
Campbeltown, .	1	16	4	...	200	...	...	...	...	...	...
Inverary, . .	42	682 $\frac{1}{4}$	166	139,500	9,675	3,477	4,488	...	...	13,568	18,056
Rothsay, . .	10	165 $\frac{1}{2}$	31	29,000	2,268	1,120	769	...	105	...	874
Glasgow, . .	...	...	...	...	...	...	7,463	...	24	...	7,487
Greenock, . .	8	206 $\frac{1}{4}$	31	20,000	5,866	2,908	2,685	...	42	6,329 $\frac{1}{2}$	9,056 $\frac{1}{2}$
Ballantrae, .	12	194	32	...	3,160	1,721	969	82	...	95	1,146
Total,	145	4,156	622	522,500	68,925	21,051	21,570 $\frac{1}{2}$	82	744	32,189 $\frac{1}{4}$	54,583 $\frac{1}{2}$

Note.—The above 145 Fishing Vessels made 194 Voyages.

Fishery Board : Scotland :
Edinburgh, 1st June 1872. }

B. F. PRIMROSE, Secretary.

No. II.

ACCOUNT of the Number of Barrels of WHITE HERRINGS Cured or Salted in SCOTLAND by Fish-Curers on Shore, in the Year ended 31st December 1871; and the Districts in which Cured, distinguishing the Herrings Cured Gutted from those Cured Ungutted.

DISTRICTS.	Herrings Cured Gutted.		Herrings Cured Ungutted.		Total Cured on Shore.
	Gutted and packed within 24 hours after being caught.	Gutted and packed, but not within 24 hours after being caught.	Barrels.	Barrels of Bulk.	
	Barrels.	Barrels.	Number.	Number.	Barrels.
Eyemouth, .	29,550	...	8,369	8,208	46,127
Leith, .	...	...	363	970	1,333
Anstruther, .	3,861	74	852	20,097 $\frac{1}{2}$	24,884 $\frac{1}{2}$
Montrose, .	48,810	544	12,154	15,774	77,282
Peterhead, .	136,095	3,050	10,310	796	150,251
Fraserburgh, .	149,351 $\frac{1}{2}$	2,916	1,296	903 $\frac{1}{2}$	154,467
Banff, .	28,074	213	94	...	28,381
Buckie, .	9,098	193	1,297	...	10,588
Findhorn, .	8,156	...	327	1,040	9,523
Cromarty, .	1,564	...	188	...	1,752
Helmsdale, .	16,797	...	1,573	...	18,370
Lybster, .	22,851	40	722	...	23,613
Wick, .	100,159 $\frac{1}{2}$	9,373	8,844	...	118,376 $\frac{1}{2}$
Orkney Isles, .	12,720	...	...	...	12,720
Shetland Isles, .	1,682	...	...	...	1,682
Stornoway, .	46,705	...	11	1,655	48,371
Loch Broom, .	2,914	...	...	48	2,962
Loch Carron and Skye, .	8,609	...	432	14	9,055
Fort William, .	1,041	...	...	739	1,780
Campbeltown, .	281	...	...	5,430	5,711
Inverary, .	1,331	...	...	10,065	11,396
Rothsay, .	448	12	25	8,405	8,890
Glasgow, .	...	45	...	190	235
Greenock, .	279	...	...	2,861	3,140
Ballantrae, .	...	...	...	...	...
Total, .	630,377	16,460	46,857	77,196	770,890

Fishery Board : Scotland :
Edinburgh, 1st June 1872. }

B. F. PRIMROSE, Secretary.

REPORT BY THE COMMISSIONERS FOR THE HERRING FISHERY. 11

HERRING FISHERY ACCOUNTS.

No. III.

ACCOUNT of the Total Number of Barrels of WHITE HERRINGS Cured or Salted in SCOTLAND in the Year ended 31st December 1871 ; distinguishing the Herrings Cured Gutted from those Cured Ungutted.

DISTRICTS.	Herrings Cured Gutted.		Herrings Cured Ungutted.		TOTAL HERRINGS CURED.
	Gutted and packed within 24 hours after being caught.	Gutted and packed ; but not within 24 hours after being caught.	Barrels.	Barrels of Bulk.	
	<i>Barrels.</i>	<i>Barrels.</i>	<i>Number.</i>	<i>Number.</i>	<i>Barrels.</i>
Eyemouth,	29,550	...	8,369	8,208	46,127
Leith, . . . . .	...	...	363	970	1,333
Anstruther,	3,861	74	852	20,097½	24,884½
Montrose,	48,810	544	12,154	15,774	77,282
Peterhead,	136,095	3,050	10,310	796	150,251
Fraserburgh,	149,351½	2,916	1,296	903½	154,467
Banff,	28,074	213	94	...	28,381
Buckie,	9,098	193	1,297	...	10,588
Findhorn,	8,156	...	327	1,040	9,523
Cromarty,	1,564	...	188	...	1,752
Helmsdale,	16,797	...	1,573	...	18,370
Lybster,	22,851	40	722	...	23,613
Wick,	100,159½	9,373	8,844	...	118,376½
Orkney Isles,	12,720	...	...	...	12,720
Shetland Isles,	1,682	...	...	...	1,682
Stornoway,	47,523	...	11	13,565	61,099
Loch Broom,	2,967	...	...	91½	3,058½
Loch Carron and Skye,	12,133½	...	1,005	257	13,359½
Fort William,	1,842	...	...	739	2,581
Campbeltown,	281	...	...	5,430	5,711
Inverary,	5,819	...	...	23,633	29,452
Rothsay,	1,217	12	130	8,405	9,764
Glasgow,	7,463	45	24	190	7,722
Greenock,	2,964	...	42	9,190½	12,196½
Ballantrae,	969	82	...	95	1,146
Total,	651,947½	16,542	47,601	109,385½	825,475½

SUPPLEMENTARY NOTE

Showing the NUMBER of BARRELS of HERRINGS Cured or Salted on the West Coast of Scotland, in the year ended 31st December 1871 ; stated by the Districts where the Herrings were caught.

DISTRICTS.	BARRELS.
Stornoway,	62,750½
Loch Broom,	4,405½
Loch Carron and Skye,	23,262½
Fort William,	2,381
Campbeltown,	7,183
Inverary,	20,405½
Rothsay,	22,362½
Glasgow,	235
Greenock,	3,140
Total,	146,125½

HERRING FISHERY ACCOUNTS.

No. IV.

ACCOUNT of the Total Number of Barrels of WHITE HERRINGS in SCOTLAND Branded in the Year ended 31st December 1871 ; and of the Brandings in each District, distinguishing Herrings Bung-packed from Herrings Re-packed ; with Return of the Fees collected thereon under the Act 21 and 22 Victoria, cap. 69.

DISTRICTS.	Description of Barrels Branded.		
	Bung Packed.	Re-packed.	TOTAL BRANDED.
	<i>Barrels.</i>	<i>Barrels.</i>	<i>Barrels.</i>
Eyemouth,	3,372	...	3,372
Leith,	1,084	...	1,084
Anstruther,	2,151	...	2,151
Montrose,	30,002	23½	30,025½
Peterhead,	93,999	...	93,999
Fraserburgh,	110,017	...	110,017
Banff,	20,133½	...	20,133½
Buckie,	6,297	...	6,297
Findhorn,	4,792	...	4,792
Helmsdale,	10,891½	...	10,891½
Lybster,	15,100	...	15,100
Wick,	45,715½	...	45,715½
Orkney Isles,	3,016½	...	3,016½
Shetland Isles,	39	...	39
Total,	346,610	23½	346,633½*

• Of this number 239,709 Barrels were Branded Crown Full.
" 44,869 " were Branded Crown Maties.
" 46,848 " were Branded Crown Spent.
" 15,184 " were Branded Crown Mixed.
" 23½ " were Branded Crown Re-packed.
346,633½ Barrels. The Fees thereon amounted to £5,777 4 6
Bank Interest, 3 1 4
Total Receipts, £5,780 5 10

NOTE showing the Total Number of Barrels in the foregoing Account Branded " Full,"
" Maties," or " Spent."

DISTRICTS.	Number of Barrels assorted and Branded Crown Full.	Number of Barrels assorted and Branded Maties.	Number of Barrels assorted and Branded Spent.
	<i>Barrels.</i>	<i>Barrels.</i>	<i>Barrels.</i>
Eyemouth,	2,323	124	375
Leith,	412	222	256
Anstruther,	1,756	321	70
Montrose,	16,535½	9,106	3,127
Peterhead,	63,058½	13,534	13,907
Fraserburgh,	82,085	3,496½	19,942½
Banff,	16,461½	658	2,083½
Buckie,	4,827	560	891
Findhorn,	3,554½	567	503½
Helmsdale,	8,217½	1,850½	613½
Lybster,	9,930	2,373	1,690½
Wick,	27,751	12,002	3,224½
Orkney Isles,	2,797½	55	164
Total,	239,709	44,869	46,848

HERRING FISHERY ACCOUNTS.

No. V.

ACCOUNT of the Number of Barrels of WHITE HERRINGS in SCOTLAND Exported in the Year ended 31st December 1871; distinguishing the Export to Ireland, to the Continent, and to places out of Europe; distinguishing also Herrings Cured Gutted from Herrings Cured Ungutted; and Herrings Bung-Packed from Herrings Re-packed.

DISTRICTS.	BARRELS OF HERRINGS EXPORTED.							
	To Ireland.			To the Continent.		To Places out of Europe.		TOTAL EXPORTED.
	Bung-Packed.		Barrels of Bulk.	Bung-Packed.		Bung-packed.	Re-packed.	
	Gutted.	Ungutted.		Gutted.	Ungutted.	Gutted.	Gutted.	
	<i>Barrels.</i>	<i>Barrels.</i>	<i>Number.</i>	<i>Barrels.</i>	<i>Barrels.</i>	<i>Barrels.</i>	<i>Barrels.</i>	<i>Barrels.</i>
Eyemouth, . .	2,089	...	...	8,552	...	...	...	10,641
Leith, . .	390	...	...	18,487½	...	...	...	18,877½
Anstruther, . .	...	...	...	2,089	...	...	...	2,089
Montrose, . .	1,215	...	...	33,407	...	...	...	34,622
Peterhead, . .	989	...	...	117,049½	190	...	...	118,228½
Fraserburgh, . .	...	...	...	128,499½	2,143½	...	...	130,643
Banff, . .	...	...	...	21,608½	...	...	...	21,608½
Buckie, . .	...	...	...	7,504	...	...	...	7,504
Findhorn, . .	...	...	...	7,868	...	...	...	7,868
Cromarty, . .	1,022	...	...	...	...	...	...	1,022
Helmsdale, . .	489½	...	...	13,129	...	...	...	13,618½
Lybster, . .	937	...	...	18,851½	...	...	...	19,788½
Wick, . .	18,150	649	...	75,989	...	...	...	94,788
Orkney Isles, . .	7,954½	...	...	2,662	...	...	...	10,616½
Shetland Isles, .	908	...	...	1,329½	...	...	...	2,237½
Stornoway, . .	...	...	...	37,857½	...	...	...	37,857½
Loch Carron and Skye,	597	...	155	...	...	...	...	752
Glasgow, . .	7,581	...	...	...	...	...	1,110	8,691
Greenock, . .	1,036	...	2,185	...	...	...	8	3,229
Sent from Scotland to England, and thence Exported, }	...	...	...	5,317½	...	1,276½	329½	6,923½
Total,	43,358	649	2,840	500,200½	2,333½	1,276½	1,447½	551,605½

HERRING FISHERY ACCOUNTS.

SUPPLEMENTARY NOTE showing the Ports or Places to which the Herrings Exported to the Continent were Shipped.

DISTRICTS.		BARRELS OF HERRINGS EXPORTED.																	TOTAL Exported to the Continent.				
		RUSSIA.			GERMAN EMPIRE.										HOLLAND.		BELGIUM.			Other Places on the Conti- nent.			
		Odessa.	Peters- burg.	Libau.	Memel.	Königs- burg.	Pillau.	Eibing.	Dantzig.	Schles- münde.	Stettin.	Hamburg.	Harburg.	Bremen.	Vlaar- dingen.	Rotter- dam.	Ghent.						
Eyemouth,	Barrels.	8,552	8,552	8,552			
Leith,	800½	750	.	.	.	.	.	.	.	Barrels.	7,089	6,471	12	1,464	88	18,627½
Anstruther,	Barrels.	666	.	.	1,428	.	2,069
Montrose,	5,279½	.	.	.	.	.	.	.	.	Barrels.	8,657½	.	.	.	.	84,974½
Peterhead,	11,517½	.	.	.	.	.	.	.	.	Barrels.	51,989½	11,886	478	1,628	588	119,949½
Frazerburgh,	17,998	.	.	.	.	.	.	.	.	Barrels.	56,896½	9,518	828	608	680	180,648
Bang,	1,561	.	.	.	.	.	.	.	.	Barrels.	7,490	.	.	1,547½	.	21,608½
Buckie,	254	.	.	.	.	.	.	.	.	Barrels.	8,108	.	.	472	.	7,504
Findhorn,	Barrels.	5,352½	202½	.	.	.	7,868
Helmsdale,	1,659	.	.	.	.	.	.	.	.	Barrels.	2,248	.	.	.	.	18,129
Lybster,	982	.	.	.	.	.	.	.	.	Barrels.	5,106½	628	.	.	.	18,851½
Wick,	4,798	.	.	.	.	.	.	.	.	Barrels.	80,801½	8,841	.	.	.	76,889
Orkney Isles,	Barrels.	1,667	.	.	.	.	2,662
Shetland Isles,	Barrels.	1,829½	.	.	.	.	1,829½
Stornoway,	841½	.	.	.	.	.	.	.	.	Barrels.	14,797½	8,160½	.	.	.	37,857½
TOTAL,								46,181	750	784	97,288½	715½	200,741	40,647	72,610	8,401	818	8,128	1,218	1,966		502,684½	

Fishery Board: Scotland:
Edinburgh, 1st June 1872. }

B. F. PRIMROSE, Secretary.

HERRING FISHERY ACCOUNTS.

No. VI.

ACCOUNT of the Number of Crans and Half Crans, adjusted as Measures for the Purchase and Sale of Fresh Herrings and Branded in SCOTLAND, in the Year ended 31st December 1871.

DISTRICTS.	ADJUSTED AND BRANDED.	
	Crans.	Half Crans.
Montrose,	27	...
Peterhead,	6	...
Greenock,	4	...
Total,	37	...

Fishery Board : Scotland : }
Edinburgh, 1st June 1872. }

B. F. PRIMROSE, *Secretary.*

ABSTRACT showing the Total Quantity of WHITE HERRINGS Cured, Branded, and Exported, year by year, in so far as brought under cognizance of Officers of the Fishery, from the 1st of June 1809 to the 31st of December 1871; distinguishing the Export to Ireland to the Continent, and to places out of Europe.

PERIODS.	Total Quantity of Herrings Cured.			Total Quantity of Herrings Branded.	Total Quantity of Herrings Exported.			Grand Total Exported.
	Gutted.	Ungutted including Bulk.	Total Cured.		To Ireland.	To the Continent.	To places out of Europe.	
Period extending from 1st June 1809 to 5th April 1810, }	<i>Barrels.</i> 42,548	<i>Bls. or Crans.</i> 47,637½	<i>Barrels.</i> 90,185½	<i>Barrels.</i> 34,701	<i>Bls. or Crans.</i> 28,014	<i>Barrels.</i> ...	<i>Barrels.</i> 7,834	<i>Barrels.</i> 35,848
Year ended 5th April 1811,	65,430	26,397½	91,827½	55,662½	28,212	...	9,921	38,133
Year ended 5th April 1812,	72,515½	39,004	111,519½	58,430	30,417½	4,730	27,672½	62,820
Year ended 5th April 1813,	89,900¾	63,587½	153,488½	70,027½	57,980	11,046½	40,699	109,725½
Year ended 5th April 1814,	52,931½	57,611	110,542½	38,184½	43,061½	23,943	51,399	118,403½
Year ended 5th April 1815,	105,372½	54,767	160,139½	83,376	49,635¾	35,891	55,778½	141,305½
Year ended 5th April 1816,	135,981	26,670¾	162,651¾	116,436	29,456½	15,563	62,668½	107,688
Year ended 5th April 1817,	155,776	36,567½	192,343½	140,018½	36,341	44,432½	57,855	138,628½
Year ended 5th April 1818,	204,270½	23,420¾	227,691	183,089½	53,386½	43,896	65,057	162,339½
Year ended 5th April 1819,	303,777½	37,116½	340,894	270,022½	89,704	52,333	85,125	227,162
Year ended 5th April 1820,	347,190½	35,301	382,491½	309,700½	101,109½	64,302½	88,104	253,516
Year ended 5th April 1821,	413,308	28,867¾	442,195¾	363,872	125,445	89,524	79,836½	294,805½
Year ended 5th April 1822,	291,626½	24,897¾	316,524½	263,205½	102,719	34,752	77,485	214,956
Year ended 5th April 1823,	225,037	23,832	248,869	203,110	56,528	38,002½	75,914½	170,445
Year ended 5th April 1824,	335,450	56,740¾	392,190¾	299,631	116,747½	40,231	82,652	239,630½
Year ended 5th April 1825,	303,397	44,268½	347,665½	270,844½	96,409½	35,029½	70,577½	202,016½
Year ended 5th April 1826,	340,118	39,115¾	379,233¾	294,422½	121,386½	28,167¾	67,519	217,073½
Year ended 5th April 1827,	259,171½	29,324	288,495½	223,606	78,735	16,701	70,970	166,406
Year ended 5th April 1828,	339,360	60,418	399,778	279,317½	109,108½	24,489½	78,061	211,659
Year ended 5th April 1829,	300,242½	55,737	355,979½	234,827	107,651	28,280½	69,944	205,875½
Year ended 5th April 1830,	280,933½	48,623½	329,557	218,418½	89,680½	24,302	67,672	181,654½
Year ended 5th April 1831,	371,096	68,274½	439,370½	237,085	130,300½	61,655½	72,947	264,903
Year ended 5th April 1832,	313,113¾	49,547	362,660¾	157,839½	128,458	31,100½	57,941½	217,499½
Year ended 5th April 1833,	353,684½	63,279¾	416,964½	168,259½	114,137	47,556½	58,991	220,684½
Year ended 5th April 1834,	382,677½	68,853¾	451,531½	178,000½	149,254	55,852	66,987½	272,094½
Year ended 5th April 1835,	217,242½	60,074½	277,317	85,079½	73,960	34,050	50,795½	158,815½
Year ended 5th April 1836,	399,334	98,280¾	497,614¾	192,317	168,960	48,451½	55,982	273,393½
Year ended 5th April 1837,	290,169	107,660½	397,829½	114,192	102,968½	46,777	39,520	189,265½
Year ended 5th April 1838,	382,400	125,374¾	507,774¾	141,552	139,095	57,388½	38,674½	235,158
Year ended 5th April 1839,	382,229	173,330¾	555,559¾	153,659½	149,926	64,870	24,934½	239,730½
Year ended 5th April 1840,	405,379½	138,565½	543,945	152,231	157,359	82,515½	12,647½	252,521½
Year ended 5th April 1841,	431,157	126,105½	557,262½	154,189	150,517½	90,951½	8,668	250,137
Year ended 5th April 1842,	489,620½	177,624¾	667,245½	190,922½	187,953	91,069½	5,713½	284,735½
Year ended 5th April 1843,	442,290	181,129¾	623,419¾	162,713	165,327½	120,136½	6,336½	291,800½
Year ended 5th April 1844,	473,556¾	191,803	665,359¾	182,988	127,770	181,953	3,793½	313,516½
Period extending from 5th April 1844 to 5th Jan. 1845, }	393,312	132,720¾	526,032¾	140,632	120,293	143,754	2,326½	266,371½
Year ended 5th January 1846,	411,271	121,375	532,646	142,473½	127,027½	113,678	2,488½	243,193½

ABSTRACT showing the Total Quantity of WHITE HERRINGS Cured, Branded, and Exported, year by year, etc.—*continued*.

PERIODS.	Total Quantity of Herrings Cured.			Total Quantity of Herrings Branded.	Total Quantity of Herrings Exported.			Grand Total Exported.
	Gutted.	Ungutted including Bulk.	Total Cured.		To Ireland.	To the Continent.	To places out of Europe.	
	<i>Barrels.</i>	<i>Bls. or Crans.</i>	<i>Barrels.</i>	<i>Barrels.</i>	<i>Bls. or Crans.</i>	<i>Barrels.</i>	<i>Barrels.</i>	<i>Barrels.</i>
Year ended 5th January 1847,	414,915 $\frac{1}{4}$	192,535 $\frac{3}{4}$	607,451	156,278 $\frac{1}{2}$	102,585	148,363 $\frac{1}{2}$	4,765 $\frac{1}{2}$	255,714
Year ended 5th January 1848,	372,989 $\frac{1}{2}$	189,754	562,743 $\frac{1}{2}$	146,500 $\frac{1}{2}$	102,690	142,532	4,959	250,181
Year ended 5th January 1849,	392,827	251,541 $\frac{1}{2}$	644,368 $\frac{1}{4}$	153,944	78,262 $\frac{1}{2}$	168,049	3,682 $\frac{1}{2}$	249,994
Year ended 5th January 1850,	507,024 $\frac{1}{2}$	263,676 $\frac{3}{4}$	770,698 $\frac{1}{4}$	213,286 $\frac{1}{2}$	78,889 $\frac{3}{4}$	257,108	4,258 $\frac{1}{2}$	340,256 $\frac{1}{4}$
*Year ended 5th January 1851, for Scotland and the Isle of Man only,	378,187	165,822 $\frac{1}{2}$	544,009 $\frac{1}{2}$	172,924 $\frac{1}{2}$	66,138	198,403	2,367	266,908
Year ended 5th January 1852, for do. do.	417,233 $\frac{1}{2}$	176,797 $\frac{3}{4}$	594,031	201,636 $\frac{1}{2}$	81,340 $\frac{1}{2}$	182,659	205	264,204 $\frac{1}{2}$
Year ended 31st December 1852, for do. do.	375,693	123,094 $\frac{1}{2}$	498,787 $\frac{1}{2}$	169,159 $\frac{1}{4}$	60,414	221,979	1,133	283,526
Year ended 31st December 1853, for do. do.	560,367	217,672 $\frac{3}{4}$	778,039 $\frac{3}{4}$	248,136 $\frac{1}{2}$	95,339	242,853 $\frac{1}{2}$	4,438 $\frac{1}{2}$	342,630 $\frac{3}{4}$
Year ended 31st December 1854, for do. do.	458,579 $\frac{1}{2}$	177,982 $\frac{3}{4}$	636,562 $\frac{1}{4}$	211,844	121,889 $\frac{3}{4}$	237,893 $\frac{1}{2}$	1,919 $\frac{1}{2}$	361,696 $\frac{3}{4}$
Year ended 31st December 1855, for do. do.	582,715 $\frac{1}{4}$	183,988 $\frac{1}{4}$	766,703 $\frac{1}{2}$	280,581 $\frac{1}{2}$	97,377	344,029	858	442,264
Year ended 31st December 1856, for do. do.	466,429 $\frac{1}{2}$	143,559	609,988 $\frac{1}{2}$	223,281	89,670 $\frac{1}{2}$	256,741	1,199 $\frac{1}{2}$	347,611 $\frac{1}{2}$
Year ended 31st December 1857, for do. do.	465,292 $\frac{1}{2}$	115,521 $\frac{1}{4}$	580,813 $\frac{3}{4}$	218,992	58,534	307,275 $\frac{1}{2}$	1,351	367,160 $\frac{1}{2}$
Year ended 31st December 1858, for do. do.	470,393 $\frac{1}{2}$	165,730 $\frac{1}{4}$	636,124	233,374	79,054	269,819	1,331 $\frac{1}{2}$	350,204 $\frac{1}{2}$
†Year ended 31st December 1859, for do. do.	381,059 $\frac{1}{2}$	110,428	491,487 $\frac{1}{2}$	158,676	68,882	203,340 $\frac{1}{2}$	748	272,979 $\frac{1}{2}$
Year ended 31st December 1860, for do. do.	496,414 $\frac{1}{2}$	184,778 $\frac{3}{4}$	681,193 $\frac{1}{2}$	231,913 $\frac{1}{2}$	86,413	291,401 $\frac{1}{2}$	156	377,970 $\frac{1}{2}$
Year ended 31st December 1861, for do. do.	519,173	149,655 $\frac{1}{2}$	668,828 $\frac{1}{2}$	265,347	81,595 $\frac{1}{2}$	308,334 $\frac{1}{2}$	384	390,313 $\frac{3}{4}$
Year ended 31st December 1862, for do. do.	656,048	174,856	830,904	346,712	70,879 $\frac{3}{4}$	423,182 $\frac{3}{4}$	847 $\frac{1}{2}$	494,910
Year ended 31st December 1863, for do. do.	507,223	147,598 $\frac{1}{2}$	654,816 $\frac{1}{2}$	276,880 $\frac{1}{2}$	72,074 $\frac{1}{2}$	333,074 $\frac{1}{2}$	2,612 $\frac{3}{4}$	407,761 $\frac{1}{2}$
Year ended 31st December 1864, for do. do.	478,781 $\frac{1}{2}$	164,868 $\frac{3}{4}$	643,650 $\frac{1}{2}$	217,392	55,420 $\frac{1}{2}$	307,282	1,805	364,507 $\frac{1}{2}$
Year ended 31st December 1865, for do. do.	470,559 $\frac{1}{2}$	151,203 $\frac{1}{2}$	621,763	216,785	42,063	309,626	1,012	352,701
Year ended 31st December 1866, for do. do.	497,814 $\frac{1}{2}$	160,332 $\frac{1}{2}$	658,146 $\frac{3}{4}$	249,510	47,319	328,272 $\frac{1}{2}$	4,474 $\frac{1}{2}$	380,066
Year ended 31st December 1867, for do. do.	631,759 $\frac{1}{2}$	193,829 $\frac{1}{2}$	825,589	317,421	42,364 $\frac{1}{2}$	432,994 $\frac{1}{2}$	3,345 $\frac{1}{2}$	478,704 $\frac{1}{2}$
Year ended 31st December 1868, for do. do.	445,468 $\frac{1}{2}$	205,965 $\frac{1}{2}$	651,433 $\frac{3}{4}$	209,462 $\frac{1}{2}$	43,414 $\frac{1}{2}$	323,479 $\frac{3}{4}$	1,850 $\frac{1}{2}$	368,744 $\frac{3}{4}$
*Year ended 31st Dec. 1869, for Scotland only,	488,831	186,312	675,143	244,522 $\frac{1}{2}$	32,342 $\frac{1}{2}$	346,793 $\frac{3}{4}$	2,197 $\frac{1}{2}$	381,333 $\frac{3}{4}$
Year ended 31st December 1870, for do.	657,059 $\frac{1}{2}$	176,101	833,160 $\frac{1}{2}$	299,381 $\frac{1}{2}$	41,524	486,064	2,970	530,558
Year ended 31st December 1871, for do.	668,489 $\frac{1}{2}$	156,986 $\frac{1}{2}$	825,475 $\frac{1}{2}$	346,633 $\frac{1}{2}$	46,347	502,534 $\frac{1}{2}$	2,724	551,605 $\frac{1}{2}$

N.B.—In the Six Years ending 5th April 1815, the Bounty on Herrings Cured Gutted, was 2s. per Barrel, while there was a Bounty at the same time of 2s. 8d. per Barrel, payable by the Excise on the Exportation of Herrings, whether Cured Gutted or Ungutted, but which ceased on the 1st June 1815; in the Eleven Years ending 5th April 1826, the Bounty on Herrings Cured Gutted was 4s. per Barrel; in the Four succeeding Years, the Bounty was reduced 1s. per Barrel each Year till the 5th of April 1830, when it ceased altogether, and has not since been renewed.

* The Collection of Returns for England ceased from the 5th of January 1850; and for the Isle of Man from the 1st of January 1869.

† By Act 21st and 22d Vict. cap. 69 (1858), there was imposed upon the Branding of Barrels and Half-Barrels of Herrings, a Fee of *Fourpence* per Barrel and *Twopence* per Half-Barrel.

Fishery Board: Scotland: }
Edinburgh, 1st June 1872. }

B. F. PRIMROSE, *Secretary*.

COD AND LING FISHERY ACCOUNTS.

No. I.

ACCOUNT, by Districts, of the Number of Vessels fitted out in SCOTLAND for the Cod and Ling Fishery, in the Year ended 31st December 1871 ; of the Tonnage of the Vessels, and the Number of Men ; also of the quantity of COD, LING, and HAKE Cured therefrom, distinguishing whether Cured Dried or Cured in Pickle.

DISTRICTS.	Vessels.	Tonnage.	Men.	Total Quantity of Cod, Ling, and Hake Cured in Vessels.		
				Number of Fish.	Cured Dried.	Cured in Pickle.
	<i>Number.</i>	<i>Tons.</i>	<i>Number.</i>	<i>Number.</i>	<i>Cwt.</i>	<i>Barrels.</i>
Peterhead, . . .	2	30	12	5,870	177	...
Fraserburgh, . . .	31	465	183	96,558	3,306	...
Orkney Isles, . . .	22	1,159	239	141,558	4,236	...
Shetland Isles, . . .	84	3,489	1,026	570,639	19,434	...
Total,	139	5,143	1,460	814,625	27,153	...

Fishery Board : Scotland :
Edinburgh, 1st June 1872. }

B. F. PRIMROSE, *Secretary.*

No. II.

ACCOUNT, by Districts, of the Cod, LING, and HAKE taken at the Cod and Ling Fishery in SCOTLAND by Open Boats and Cured on Shore, in the Year ended 31st December 1871 ; distinguishing the Fish Cured Dried and the Fish Cured in Pickle.

DISTRICTS.	Total Quantity of Cod, Ling, and Hake Cured on Shore.		
	Number of Fish.	Cured Dried.	Cured in Pickle.
	<i>Number.</i>	<i>Cwt.</i>	<i>Barrels.</i>
Leith,	70,227	1,976½	...
Anstruther,	18,040	475½	129
Montrose,	38,636	1,269	34
Peterhead,	47,894	789	774
Fraserburgh,	64,911	2,123	304
Banff,	75,014	2,659	50
Buckie,	85,651	1,419	2,604
Findhorn,	37,087	516½	999
Cromarty,	15,766	136	305
Helmsdale,	39,430	914	710
Lybster,	7,913	145	213
Wick,	66,686	601½	2,152
Orkney Isles,	306,910	10,021	6
Shetland Isles,	1,323,198	46,391	...
Stornoway,	332,395	14,698½	3
Loch Broom,	57,971	2,032½	80
Loch Carron and Skye,	30,552	1,083	...
Fort William,	27,850	1,280	...
Campbeltown,	61,244	3,291	...
Inverary,	1,750	56	...
Ballantrae,	28,520	...	920
Total,	2,767,645	91,877	9,283

Fishery Board : Scotland :
Edinburgh, 1st June 1872. }

B. F. PRIMROSE, *Secretary.*

COD AND LING FISHERY ACCOUNTS.

No. III.

ACCOUNT, by Districts, of the Total Quantity of COD, LING, and HAKE taken, both by Vessels and by open Boats, at the Cod and Ling Fishery in SCOTLAND, and Cured, in the Year ended 31st December 1871 ; distinguishing the Fish Cured Dried and the Fish Cured in Pickle.

DISTRICTS.	Total Quantity of Cod, Ling, and Hake Cured.		
	Number of Fish.	Cured Dried.	Cured in Pickle.
	<i>Number.</i>	<i>Cwts.</i>	<i>Barrels.</i>
Leith,	70,227	1,976½	...
Anstruther,	18,040	475½	129
Montrose,	38,636	1,269	34
Peterhead,	53,764	966	774
Fraserburgh,	161,469	5,429	304
Banff,	75,014	2,659	50
Buckie,	85,651	1,419	2,604
Findhorn,	37,087	516½	999
Cromarty,	15,766	136	305
Helmsdale,	39,430	914	710
Lybster,	7,913	145	213
Wick,	66,686	601½	2,152
Orkney Isles,	448,468	14,257	6
Shetland Isles,	1,903,837	65,825	...
Stornoway,	332,395	14,698½	3
Loch Broom,	57,971	2,032½	80
Loch Carron and Skye,	30,552	1,083	...
Fort William,	27,850	1,280	...
Campbeltown,	81,244	3,291	...
Inverary,	1,750	56	...
Ballantrae,	28,520	...	920
Total,	3,582,270	119,030	9,283

Fishery Board : Scotland : }
Edinburgh, 1st June 1872. }

B. F. PRIMROSE, *Secretary.*

No. IV.

ACCOUNT of the Total Quantity of COD, LING, and HAKE, Exported from SCOTLAND, in the Year ended 31st December 1871, with the Districts from which Exported ; distinguishing the Export to Ireland, to the Continent, and to places out of Europe ; also whether Cured Dried or Cured in Pickle.

DISTRICTS.	COD, LING, AND HAKE EXPORTED			
	To Ireland.	To the Continent.	To places out of Europe.	TOTAL EXPORTED.
	Cured Dried.	Cured Dried.	Cured Dried.	Cured Dried.
	<i>Cwts.</i>	<i>Cwts.</i>	<i>Cwts.</i>	<i>Cwts.</i>
Leith,	600	...	2,225	2,825
Wick,	300	...	...	300
Shetland Isles,	18,426	18,767	...	37,193
Stornoway,	490	...	...	490
Campbeltown,	2,598	...	...	2,598
Glasgow,	1,191	...	2,549	3,740
Greenock,	6,717½	...	308	7,025½
Total,	30,322½	18,767	5,082	54,171½

Fishery Board : Scotland : }
Edinburgh, 1st June 1872. }

B. F. PRIMROSE, *Secretary.*

ABSTRACT, showing the Total Quantity of COD, LING, and HAKE, Cured, Punched or Branded, and Exported year by year, in so far as brought under cognizance of Officers of the Fishery, from the 10th of October 1820 when the System for Encouragement and Improvement of the Cod and Ling Fishery commenced, to the 31st December 1871.

PERIODS.	Total Quantity of Cod, Ling, and Hake Cured.			Total Quantity of Cod, Ling, and Hake Punched or Branded.		Total Quantity of Cod, Ling, and Hake Exported.			
	Cured Dried.	Cured in Pickle.		Cured Dried.	Cured in Pickle.	Cured Dried.	Cured in Pickle.	Barrels.	Barrels.
	Cwts.	Cwts.	Barrels.	Cwts.	Barrels.	Cwts.	qrs.	lbs.	Barrels.
Period extending from 10th October 1820 to 5th April 1822, }	...	...	...	50,235½	4,919½	19,578	3	„	...
Year ended 5th April 1823,	...	...	...	54,573	3,691	19,398	3	„	...
Year ended 5th April 1824,	...	...	...	63,590	5,437	23,098	„	3	...
Year ended 5th April 1825,	...	...	...	52,135	3,531	14,087	2	19	...
Year ended 5th April 1826,	69,136½	3,634½	5,621	66,315½	5,337	7,281	1	14	...
Year ended 5th April 1827,	95,161½	9,273	9,025	82,185½	8,008½	14,051	2	27	...
Year ended 5th April 1828,	82,515½	6,726	6,142½	74,103½	5,609½	13,208	2	„	...
Year ended 5th April 1829,	81,321½	5,786	6,819	73,500½	6,204	20,587	3	4	...
Year ended 5th April 1830,	101,914	5,652½	8,836½	92,314½	8,464	16,369	3	15	...
Year ended 5th April 1831,	37,674	...	2,950½	34,337½	2,459½	11,920	1	1	...
Year ended 5th April 1832,	50,293	...	3,779½	13,879½	3,230	20,168	3	16	47
Year ended 5th April 1833,	58,461½	...	6,467½	13,581½	4,393½	14,754	1	26	67
Year ended 5th April 1834,	52,710½	...	5,522½	14,255½	3,829	16,298	3	„	24
Year ended 5th April 1835,	44,152½	...	3,767½	9,492½	2,235	10,632	2	24	...
Year ended 5th April 1836,	38,040	...	6,276	6,766	3,018	10,992	2	20	...
Year ended 5th April 1837,	66,892½	...	7,273	9,589½	3,206	10,195	2	11	1½
Year ended 5th April 1838,	84,996½	...	10,303	9,259½	4,373	22,166	2	12	36
Year ended 5th April 1839,	85,279½	...	10,051½	23,936½	5,093	26,701	3	„	150
Year ended 5th April 1840,	93,560½	...	6,053	21,695½	3,205	29,656	1	„	24
Year ended 5th April 1841,	91,494½	...	9,480	21,029½	3,891	30,550	1	„	44
Year ended 5th April 1842,	76,849	...	7,038½	13,283½	2,164	25,293	1	„	...
Year ended 5th April 1843,	77,207½	...	6,431	10,030½	1,342	23,737	3	„	7
Year ended 5th April 1844,	92,813½	...	5,123	20,810½	2,226½	35,476	„	„	4
Period extending from 5th April 1844 to 5th January 1845, }	83,919	...	1,726	17,940½	229	28,815	„	„	20
Year ended 5th January 1846,	92,323	...	5,037	14,372½	935	29,352	„	„	...
Year ended 5th January 1847,	90,783½	...	6,341½	12,387½	1,492	34,435	1	„	15
Year ended 5th January 1848,	86,624½	...	6,247½	8,145½	955	25,662	3	„	...
Year ended 5th January 1849,	85,463	...	6,810½	9,520	1,681	22,608	3	„	...
Year ended 5th January 1850,	98,903	...	6,588	15,556	997	24,154	1	„	20
*Year ended 5th January 1851, } for Scotland and the Isle of Man only, }	90,658½	...	5,032	† ...	...	22,304	1	„	...

* The Collection of Returns for England ceased from the 5th of January 1850.

† The Punching and Branding of Cod and Ling ceased from the 5th of January 1850.

ABSTRACT, showing the Total Quantity of COD, LING, and HAKE, Cured, Punched or Branded, and Exported year by year, etc.—*continued*.

PERIODS.	Total Quantity of Cod, Ling, and Hake Cured.			Total Quantity of Cod, Ling, and Hake Punched or Branded.		Total Quantity of Cod, Ling, and Hake Exported.		
	Cured Dried.	Cured in Pickle.		Cured Dried.	Cured in Pickle.	Cured Dried.	Cured in Pickle.	
Year ended 5th January 1852, for Scotland and the Isle of Man only, }	<i>Cwts.</i> 92,083½	<i>Cwts.</i> ...	<i>Barrels.</i> 7,019½	<i>Cwts.</i> ...	<i>Barrels.</i> ...	<i>Cwts.</i> 17,141	<i>qrs.</i> 2	<i>lbs.</i> ,,
Year ended 31st Decr. 1852, for do. do. }	102,976½	...	6,886	...	...	18,994	2	,,
Year ended 31st Decr. 1853, for do. do. }	105,596	...	5,122½	...	...	22,650	3	,,
Year ended 31st Decr. 1854, for do. do. }	109,684½	...	6,166½	...	...	19,557	2	,,
Year ended 31st Decr. 1855, for do. do. }	113,561½	...	6,316½	...	...	29,154	2	,,
Year ended 31st Decr. 1856, for do. do. }	110,504½	...	6,642	...	...	29,629	3	,,
Year ended 31st Decr. 1857, for do. do. }	104,668½	...	4,393½	...	...	34,310	,,	,,
Year ended 31st Decr. 1858, for do. do. }	95,596	...	4,584	...	...	32,152	,,	,,
Year ended 31st Decr. 1859, for do. do. }	118,383	...	5,362½	...	...	35,923	,,	,,
Year ended 31st Decr. 1860, for do. do. }	115,688	...	4,339½	...	...	32,221	,,	,,
Year ended 31st Decr. 1861, for do. do. }	82,344½	...	4,145½	...	...	26,961	,,	,,
Year ended 31st Decr. 1862, for do. do. }	100,657½	...	7,735½	...	...	32,969	3	,,
Year ended 31st Decr. 1863, for do. do. }	129,725½	...	7,337	...	...	53,736	,,	,,
Year ended 31st Decr. 1864, for do. do. }	107,758½	...	7,963½	...	...	46,461	,,	,,
Year ended 31st Decr. 1865, for do. do. }	112,807	...	7,678	...	...	44,928	3	,,
Year ended 31st Decr. 1866, for do. do. }	115,819	...	9,957½	...	...	47,753	,,	,,
Year ended 31st Decr. 1867, for do. do. }	119,638½	...	10,819	...	...	46,225	,,	,,
Year ended 31st Decr. 1868, for do. do. }	113,831	...	9,659	...	...	52,403	,,	,,
Year ended 31st Decr. 1869, for Scotland only, }	135,585½	...	10,319	...	...	51,864	2	,,
Year ended 31st Decr. 1870, for do. do. }	145,288½	...	9,945	...	...	56,400	2	,,
Year ended 31st Decr. 1871, for do. do. }	119,030	...	9,283	...	...	54,171	1	,,

N.B.—The Books of this department do not exhibit the Total Quantity of Cod, Ling, and Hake Cured till the Year commencing 5th April 1825. Bounty, from the commencement of this Abstract to the 5th of April 1830, was 4s. per cwt. for Fish cured Dried, and 2s. 6d. per Barrel for Fish cured in Pickle, taken by the Crews of Vessels or Boats not on the Tonnage Bounty; while the Bounty for Vessels licensed for the Cod and Ling only, on the Tonnage Bounty, was 50s. per Ton, for Tonnage and Cargo to the 5th of July 1826; 45s. from thence to the 5th of July 1827; 40s. from the 5th of July 1828; and 35s. to the 5th of April 1830, when the Bounties ceased altogether, and have not since been renewed.

* The collection of Returns for the Isle of Man ceased from the 1st of January 1869.

Fishery Board : Scotland :
Edinburgh, 1st June 1872. }

B. F. PRIMROSE, *Secretary*.

FISHERY STATISTICS.

No. I.

FISHERY STATISTICS.—Account of the Number of Boats, whether Decked or Undecked, *irrespective* of the places to which they belong, employed in the Herring Fishery: SCOTLAND: in the Season of 1871, in a selected Week for each District; with the Number of Fishermen and Boys by whom manned; of Coopers, Gutters, Packers, and Labourers employed at the said Fishery in the Week so selected, and the Total Number of all such Fishermen and other Persons so employed.

Districts where the Boats were employed at the Herring Fishery.	Boats.	Fishermen and Boys.	Coopers.	Gutters and Packers.	Labourers.	Total Persons employed.
	<i>Number.</i>	<i>Number.</i>	<i>Number.</i>	<i>Number.</i>	<i>Number.</i>	<i>Number.</i>
Eyemouth, . .	488	2,382	160	946	222	3,710
Leith, . . .	110	400	55	170	44	669
Anstruther, . .	220	1,260	79	795	123	2,257
Montrose, . .	602	3,398	167	1,158	133	4,856
Peterhead, . .	630	3,425	266	1,648	218	5,557
Fraserburgh, . .	547	2,948	207	1,569	201	4,925
Banff, . . .	250	1,250	55	705	74	2,084
Buckie, . . .	84	460	29	252	28	769
Findhorn, . .	161	876	54	519	58	1,507
Cromarty, . .	140	740	36	368	38	1,182
Helmedale, . .	250	1,371	72	729	51	2,223
Lybster, . . .	233	1,272	66	590	62	1,990
Wick,	904	5,424	273	2,321	233	8,251
Orkney Isles, . .	260	1,348	59	619	27	2,053
Shetland Isles, .	247	964	24	376	1	1,365
Stornoway, . .	1,123	5,908	249	2,716	76	8,949
Loch Broom, . .	520	2,070	13	670	131	2,884
Loch Carron and Skye,	400	1,200	25	320	19	1,564
Fort William, . .	170	510	14	267	21	812
Campbeltown, . .	326	815	3	20	...	838
Inverary, . . .	446	1,784	16	250	69	2,119
Rothsay, . . .	550	1,650	28	80	8	1,766
Glasgow, . . .	35	105	2	6	8	121
Greenock, . . .	80	320	12	30	47	409
Ballantrae, . .	90	210	3	...	20	233

Fishery Board: Scotland: }
Edinburgh, 1st June 1872. }

B. F. PRIMROSE, *Secretary.*

FISHERY STATISTICS—Continued.

FISHERY STATISTICS.—ACCOUNT of the Number and Tonnage of Boats, Decked or Undecked, employed in the Shore Curing Herring, and Cod and Ling Fisheries: SCOTLAND: in the Year ended 31st December 1871, with the Districts to which they belong; the Number of Fishermen and Boys by whom manned; the Number of Fish-curers, Coopers, and other Persons employed; with the estimated value of Boats, Nets, and Lines.

No. II.

DISTRICTS.	Boats.		Fishermen and Boys.	Fish-curers.	Coopers.	Other Persons (Estimated).	TOTAL PERSONS EMPLOYED.	VALUE (Estimated) of—			
	Number.	Tons.						Boats.	Nets.	Lines.	TOTAL.
Eyemouth,	736	8,498	2,075	48	160	3,175	5,458	£29,250	£31,608	£6,354	£67,212
Leith,	582	4,792	1,369	15	81	983	2,448	17,541	21,592	2,359	41,492
Anstruther,	742	7,170	2,650	68	79	2,545	5,342	27,196	53,108	14,155	94,459
Montrose,	941	5,316	1,857	58	167	2,556	4,638	19,901	19,264	8,949	48,114
Peterhead,	465	4,572	1,221	42	269	2,415	3,947	19,720	21,783	3,670	45,173
Fraserburgh,	604	5,496	1,703	49	207	2,593	4,552	19,284	31,497	5,229	56,010
Banff,	427	3,423	1,170	41	55	1,357	2,623	8,094	16,640	3,940	28,674
Buckie,	841	9,723	3,153	32	33	2,535	5,753	42,177	47,280	11,158	100,615
Findhorn,	499	4,608	1,779	23	61	2,996	4,859	14,089	27,150	3,535	44,774
Cromarty,	323	2,972	992	13	43	763	1,811	8,400	14,632	2,027	25,059
Helmisdale,	259	2,127	902	21	72	838	1,838	3,950	12,542	1,620	18,112
Lybster,	283	3,196	1,191	28	66	652	1,937	8,821	12,787	612	22,220
Wick,	1,102	11,139	4,110	80	274	4,507	8,971	41,612	48,362	4,187	94,161
Orkney Isles,	663	4,476	2,621	27	61	986	3,695	12,233	12,332	557	25,122
Shetland Isles,	627	1,085	2,973	47	24	1,056	4,100	6,050	4,272	4,983	15,305
Sornoway,	1,166	8,491	4,125	37	58	4,449	8,669	21,484	28,786	10,946	61,216
Loch Broom,	708	3,786	2,893	19	13	2,736	5,661	9,056	19,802	3,255	32,113
Loch Carron and Skye,	720	2,161	2,084	33	5	908	3,030	7,013	17,496	2,238	26,747
Fort William,	627	1,787	1,374	63	14	585	2,036	4,371	5,352	1,320	11,043
Campbeltown,	481	2,117	1,098	43	4	428	1,573	9,810	10,962	746	21,518
Inverary,	962	3,834	2,160	96	16	544	2,816	15,882	30,936	720	47,538
Rothsay,	568	2,406	1,150	24	21	703	1,898	15,357	15,305	290	30,952
Glasgow,	137	420	342	25	24	754	1,145	2,072	2,830	370	5,272
Greenock,	371	1,517	705	15	13	443	1,176	5,658	6,487	495	12,640
Ballantrae,	479	1,054	849	8	5	538	1,400	4,410	3,783	946	9,139
Total,	15,313	106,166	46,546	955	1,825	42,045	91,371	£373,431	£516,588	£94,661	£984,680

Fishery Board: Scotland: }
Edinburgh, 1st June 1872. }
B. F. PRIMROSE, Secretary.

No. III.

FISHERY STATISTICS.—ACCOUNT of the Tonnage of Shipping and of the number of Seamen engaged in the Trade of the Herring and Cod and Ling Fisheries : SCOTLAND : in the Year ended 31st December 1871 ; distinguishing those employed in Importing Stave Wood, Hoops, and Salt, in carrying Herrings or Cod Fish Coastwise, or Exporting them abroad, and distinguishing British from Foreign Tonnage and Men.

DISTRICTS.	TONNAGE AND MEN.												TOTAL.			
	Importing Stave Wood and Hoops for the Fisheries.				Importing Salt for the Fisheries.				Carrying Herrings or Cod-Fish Coastwise.				Exporting Herrings or Cod-Fish.			
	British.		Foreign.		British.		Foreign.		British.		Foreign.		British.		Foreign.	
	Tons.	Men.	Tons.	Men.	Tons.	Men.	Tons.	Men.	Tons.	Men.	Tons.	Men.	Tons.	Men.	Tons.	Men.
Eyemouth,	1,165	35	268	12	2,066	103	..	..	2,557	159	..	..	555	33	632	38
Leith,	350	20	300	25	560	29	..	..	540	36	..	..	2,603	260	190	12
Anstruther,	456	22	247	20	459	30	..	..	665	48	..	..	144	8	..	..
Montrose,	420	24	55	5	2,451	185	..	..	609	46	..	..	2,237	130	1,248	74
Peterhead,	79	6	2,271	175	4,598	319	..	..	550	36	..	..	10,635	610	2,307	120
Fraserburgh,	369	19	1,778	132	2,702	249	..	..	496	39	..	..	11,639	691	1,824	108
Banff, . . . . .	..	..	296	27	1,082	71	..	..	40	6	..	..	1,836	110	895	25
Buckie, . . . . .	..	..	..	..	943	44	..	..	50	4	..	..	539	33	83	5
Findhorn,	84	5	162	16	509	38	..	..	..	..	..	..	851	54	..	..
Cromarty,	79	20	..	..	362	28	..	..	141	11	..	..	83	7	..	..
Helmsdale,	275	51	..	..	810	61	..	..	146	48	..	..	1,138	69	187	9
Lybster,	250	15	..	..	795	64	..	..	160	52	..	..	2,017	135	..	..
Wick,	1,284	82	2,091	149	3,233	221	..	..	1,905	192	..	..	8,046	537	1,279	94
Orkney Isles, . . . . .	..	..	75	11	1,335	109	..	..	945	66	..	..	1,252	99	..	..
Shetland Isles, . . . . .	..	..	..	..	1,802	122	..	..	1,975	117	..	..	1,090	82	1,229	102
Stornoway,	456	41	81	9	4,143	299	559	24	6,037	433	..	..	3,989	322	..	..
Loch Broom, . . . . .	..	..	..	..	308	19	..	..	175	10	..	..	..	..	..	..
Loch Carron and Skye, . . . . .	..	..	..	..	1,074	74	..	..	3,150	164	..	..	169	18	..	..
Fort-William, . . . . .	..	..	..	..	368	64	..	..	3,012	179	..	..	..	..	..	..
Campbeltown, . . . . .	..	..	..	..	190	13	..	..	927	82	..	..	130	6	..	..
Inverary, . . . . .	..	..	..	..	330	22	..	..	2,000	84	..	..	..	..	..	..
Rothsay, . . . . .	..	..	..	..	285	19	..	..	1,279	50	..	..	..	..	..	..
Glasgow,	56	4	..	..	135	7	..	..	1,070	50	..	..	1,429	74	..	..
Greenock, . . . . .	..	..	..	..	500	27	..	..	640	28	..	..	812	40	..	..
Ballantrae, . . . . .	..	..	..	..	100	9	..	..	90	9	..	..	..	..	..	..
Total,	5,323	344	7,624	581	31,140	2,176	559	24	29,159	1,899	..	..	51,194	3,318	9,324	587
													116,816	7,787	17,507	1,192

B. F. PRIMROSE, Secretary.

Fishery Board: Scotland: Edinburgh, 1st June 1872 }

FISHERY STATISTICS—Continued.

No. IV.
FISHERY STATISTICS.—ABSTRACT ACCOUNTS showing the Tonnage of Vessels and Number of Men, the Tonnage of Boats and Number of Fishermen and Boys, and the Number of other Persons employed in the Herring and Cod and Ling Fisheries: SCOTLAND: in the Year ended 31st December 1871.

ABSTRACT.	Tonnage of Vessels and Number of Men.				Tonnage of Boats, and Number of Fishermen and Boys.	Number of other Persons.	Total Tonnage and Persons Employed.			
	British.		Foreign.				British.		Foreign.	
	Tons.	Men.	Tons.	Men.			Tons.	Persons.	Tons.	Persons.
	Tons.	Men.	Tons.	Men.			Tons.	Persons.	Tons.	Persons.
Total of Herring Fishery Account, No. 1,	4,156	622	...	...	...	...	4,156	622	...	...
Do. of Cod and Ling Fishery Account, No. 1,	5,143	1,460	...	...	...	...	5,143	1,460	...	...
Do. of Fishery Statistics Account, No. 2,	...	...	...	...	106,166	46,546	106,166	91,371	...	...
Do. of do. No. 3,	116,816	7,737	17,507	1,192	...	...	116,816	7,737	17,507	1,192
Total,	126,115	9,819	17,507	1,192	106,166	46,546	232,281	101,190	17,507	1,192

Fishery Board: Scotland: }
Edinburgh, 1st June 1872. }
B. F. PRIMROSE, Secretary.

REPORT by the ENGINEERS on the State of the HARBOUR WORKS under Charge
of the FISHERY BOARD : SCOTLAND.

The only Work in progress during the season of 1871 was the deposit of Cement
Rubble Blocks for the protection of the East Pier of Anstruther Union Harbour.

D. & T. STEVENSON,
Engineers.

EDINBURGH, 1st June 1872.

HARBOUR ACCOUNTS.

GENERAL ACCOUNT, PIERS OR QUAYS.

An ACCOUNT of the SUMS RECEIVED and PAID by the COMMISSIONERS of the HERRING FISHERY for BUILDING or REPAIRING PIERS or QUAYS : SCOTLAND : under the Act 5th George IV. Cap. 64, in the year ended 31st December 1871.

1871.		1871.	
<i>Dr.</i>		<i>Cr.</i>	
1871.		Dec. 31.	By Payments made in the year out of this Account
To Balance remaining at 31st December 1870, .	£621 6 11	further on account of the Works on Anstruther	
June 3. " Cash, being Bank Interest on this Account, year		Union Harbour,	£7,791 16 3
ending 31st March 1871,	4 8 5	" Balance remaining at 31st December 1871, . .	2,909 2 5
30. " Cash, being Parliamentary Grant, year ending			
31st March 1872,	3,000 0 0		
Aug. 16. " Cash, from the Leith Dock Commission, being for			
hire of Board's Diving Bell,	75 3 4		
23. " Cash, being Special Vote by Parliament for Repair			
of the East Pier of Anstruther Union Harbour, . .	7,000 0 0		
	£10,700 18 8		£10,700 18 8

Fishery Board : Scotland :
Edinburgh, 1st June 1872. }

B. F. PRIMROSE, *Secretary.*

ABSTRACT showing the EXPENDITURE upon the HARBOUR WORKS carrying on by the COMMISSIONERS of the HERRING FISHERY : SCOTLAND :
Year ended 31st December 1871.

<i>Dr.</i>		<i>Cr.</i>	
ANSTRUTHER UNION HARBOUR—COUNTY OF FIFE.		ANSTRUTHER UNION HARBOUR COMMISSIONERS.	
1871.		1871.	
To Balance remaining at 31st December 1870,	£87 5 7	By Work of Construction,	£126 0 0
August 23. " Cash, being Special Vote of Parliament, Session 1871, for securing the East Pier,	7,000 0 0	" Payments out of the Special Vote of £7000 for securing the East Pier,	4,665 16 3
		" Balance remaining at 31st December 1871,	2,295 9 4
	<u>£7,087 5 7</u>		<u>£7,087 5 7</u>

Fishery Board : Scotland : }
Edinburgh, 1st June 1872. }

B. F. PRIMROSE, *Secretary.*

REPORT

BY THE

COMMISSIONERS FOR THE HERRING FISHERY :

SCOTLAND :

OF THEIR PROCEEDINGS

IN THE YEAR ENDED 31ST DECEMBER 1871,

BEING FISHING 1871.



Government Documents



3 2044 106 495 054